



Dairy Value Chain Collaboration Colloquium: AFTER-ACTION REPORT

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Executive Summary

On 8 May 2014, 50+ individuals came together in Kampala, Uganda for the Dairy Value Chain Collaboration Colloquium to explore partnership opportunities to address pressing challenges in the East African dairy value chain. Challenges like poor access to veterinary care, inadequate knowledge of breeding practices, and insufficient market access make it difficult for farmers, processors, and other stakeholders to capture the full benefits of dairy production in East Africa. Overcoming these multi-faceted challenges requires integrated solutions that maximize the expertise and engagement of stakeholders all along the dairy value chain. The Global Knowledge Initiative (GKI) designed the Dairy Value Chain Collaboration Colloquium to spur the creation of such solutions.

The Dairy Value Chain Collaboration Colloquium brought together participants representing research, business, development organizations, and government to share knowledge, build skills, and explore opportunities for partnership. These activities were aimed at addressing challenges offered by seven individuals or “Challengers” working in the dairy value chain: Clayton Arinanye of the Uganda Crane Creameries Cooperative Union; Fred Kabi of Makerere University; James Lwerimba of World Wide Sires; Billy Butamanya of the Uganda Cooperative Alliance; Henry Njakoi of Heifer International; Tom Sillayo of Faida Market Link (Faida MaLi); and Mayasa Simba of the Tanzania Dairy Board. The event featured four facilitated steps designed to reveal possible pathways to partnership: (1) identifying shared goals; (2) mapping key aspects of the challenge; (3) identifying resources for strategic action; and (4) testing and strengthening ideas.

Each Challenger came away with a particular set of opportunities based on his or her focus, detailed further in this report. Additionally, several cross-cutting themes regarding segments of the dairy value chain most in need of attention, knowledge sharing, and collaborative innovation emerged. These include: (1) farmer training; (2) consumer sensitization; and (3) capitalizing on existing linkages to farmers. To incentivize ongoing partnership and solution development spurred through this event, the Dairy Value Chain Challenge Prize—created through the generous support of Agri-ProFocus and SNV, the Uganda Industrial Research Institute (UIRI), and the Uganda National Council for Science and Technology (UNCST)—offers a package of support to a winning team committed to taking action on a challenge featured at the Colloquium. The energy and collaborative spirit with which participants engaged in the Colloquium bodes well for the emergence of action-oriented networks aimed at developing integrated solutions East African dairy value chain challenges.

Dairy Value Chain Collaboration Colloquium by the numbers:

50+	participants
7	Challengers
167	partnership opportunities identified
92	resources available and needed to take action on those opportunities

Collaboration Colloquium Overview

On 8 May 2014, 50+ individuals representing research, business, funders, development organizations, and government came together in Kampala, Uganda for the Dairy Value Chain Collaboration Colloquium. During the one-day event, the participants explore creative ways they might partner to address pressing challenges in the East African dairy value chain. The challenges and opportunities within the East African dairy value chain are critical: as incomes and populations grow in East Africa, so does demand for milk and dairy products. This demand holds the promise of increased economic opportunity for farmers, processors, distributors, and others. However, these economic benefits can only be realized if the growing demand can be met. Numerous and compounding challenges, such as poor access to animal care, inadequate knowledge of feeding practices, and insufficient market access make it difficult for farmers, processors, and other value chain actors to capture the full benefits of dairy production in East Africa. Overcoming these multi-faceted challenges requires integrated solutions that incorporate expertise and engagement from diverse stakeholders along the dairy value chain. The Global Knowledge Initiative (GKI)—an international non-profit organization that builds collaborative networks to solve development challenges pertinent to science, technology, and innovation—designed the Dairy Value Chain Collaboration Colloquium to seed the creation of such solutions.

The goals of knowledge sharing, skill building, and developing partnerships to create real solutions drove the Colloquium. Not satisfied to foster partnership for partnership's sake, the Colloquium centered on seven critical dairy value chain challenges presented by vetted "Challengers" actively working to address these issues. Their names and selected challenges follow. For additional details on each Challenger's goal for solving this challenge, vision for success, and specific outputs from the Collaboration Colloquium, please see Annex I on page 8.

Challenger Challenge

Clayton Arinanye

Uganda Crane Creameries Cooperative Union

Helping farmers increase milk production and processing

Fred Kabi

Makerere University

Raising on-farm productivity by improving animal nutrition via the cultivation of earthworms

James Lwerimba

World Wide Sires

Improving farm and dairy management skills to ensure full realization of the benefits of good genetics

Billy Butamanya

Uganda Cooperative Alliance

Improving rural farmers' access to high-quality, reliable, and affordable veterinary care

Henry Njakoi

Heifer International

Leveraging the technologies and innovations of the private sector to increase the production of quality heifers

Tom Sillayo

Faida MaLi

Helping farmers maintain market access by producing milk of reliable volume and quality

Mayasa Simba

Tanzania Dairy Board

Incentivizing awareness, understanding, and compliance with regulations in the dairy value chain

Collaboration Colloquium Activities

Setting the Stage

The Dairy Value Chain Collaboration Colloquium kicked off with welcome remarks from the Society for the Advancement of Science in Africa's (SASA) Executive President Dr. Joachim Kapalanga and Scientific Committee Chairman Dr. Alain Fymat and an introduction to the day by the GKI Program Officer Andrew Gerard. Next, a keynote address from Professor Peter Okidi-Lating of Makerere University's College of Engineering, Design, Art, and Technology established the rationale for multi-disciplinary, cross-sectoral engagement. Professor Okidi-Lating, an expert on inclusive innovation and trans-disciplinary research, also shared his insights on the potentially transformative opportunities for value chain innovation that exist at the intersection of government, business, and research.

"What we shared here was not an exercise. These are actual challenges we are working on. The Collaboration Colloquium expanded our knowledge and was a very rich experience for us.

**-Henry Njakoi
Country Director, Heifer International, Tanzania
Challenger**

Invigorated by Professor Okidi-Lating's address and keen to develop integrated solutions in the dairy value chain, the seven Challengers introduced themselves, detailing the challenge they seek to solve, their visions for solving that challenge, and the top-3 partnership opportunities for creating viable solutions to their challenges. After a question-and-answer session moderated by the Netherlands Development Organization SNV's Sarah Mubiru, the group began the process of exploring how new partnerships might be formed to take on these challenges and improve the East African dairy value chain. A description of the facilitated steps the group took to reveal these opportunities follows.



Identifying strategic actions:
Challengers Billy Butamanya and Henry Njakoi discuss which actions must be taken to seize priority opportunities.



Visualizing opportunities to reach shared goals:

Challenger Clayton Arinanye and participants assess opportunities for collaboration to solve a shared challenge.

Revealing pathways to partnership

A series of highly interactive steps enabled participants to move from exploring high level challenges such as animal health and breeding, down to identifying very specific actions to be taken and resources to be mobilized through partnership in a relatively short timeframe. Facilitated by GKI Program Officers Andrew Gerard and Courtney O'Brien, these steps helped participants articulate a clear rationale and actionable opportunities for collaboration. **Annex I starting on page 8 features the output of this process for each of the seven challenges featured at the Colloquium.**

Facilitated Steps

1	Identifying shared goals	<p>Objective: Collaboratively set a vision for what success looks like tackling selected challenges in 5 years and in 1 year</p> <p>Description: Looking forward 5 years and then 1 year, teams explored and set shared visions for the future around each Challenger's particular challenge. Creating a shared vision for success is a key step in pursuing collaborative action and solutions, as it clarifies why people want to work together. After working in small teams, Challengers shared with the full group of participants their 1-year visions for success.</p>
2	Challenge mapping	<p>Goals: Identify actionable opportunities for and bottlenecks to achieving Challengers' 1-year visions for success</p> <p>Description: An interactive design tool, challenge mapping helps groups visualize what actions are needed to achieve a shared vision, such as those created in step 1. Challenge mapping helps diverse groups identify how their seemingly disparate priorities might fit together in a collective strategy. Working in three thematic clusters around the issues of Value Addition; Animal Health and Breeding; and Milk Quality and Volume; participants created challenge maps by asking the question: How might we achieve our shared vision? The maps took shape as participants offered dozens of ideas for how the Challenger's core issue might be addressed. From these many opportunities, each Challenger selected his or her top-six priorities. From these top-six, teams voted to identify the one opportunity deemed most critical to realizing a Challenger's vision for success. Annex I features the top-6 and winning opportunities for each Challenger.</p>
3	Identifying resources for strategic action	<p>Goals: Identify specific resources that are available and needed to take strategic action to realize a Challenger's 1-year vision for success</p> <p>Description: Well-designed partnerships enable engaged parties to access different kinds of resources—research equipment, data sets, training materials—than they could on their own. Understanding this, Challengers and participants brainstormed the resources currently available to seize the opportunity prioritized in step 2. They also highlighted the resources they still need to take that action. Identifying and cataloguing resources in this way helps collaborators establish a rationale for prioritizing certain partners over others.</p>
4	Testing and strengthening our ideas	<p>Goals: Use the experience and expertise of participants to test and strengthen Challengers' strategy for addressing their challenges</p> <p>Description: During this final step, Challengers presented their "pitch" on the challenge they seek to solve, what they hope to accomplish in one year, the resources they still need to achieve this vision, and their expected impact. Participants and other Challengers then offered questions, insights, and resources to help each Challenger refine his or her approach and call to action. Ideally Challengers will use this pitch after the event to bring on more partners.</p>

Key Takeaways and Looking Forward

Key Takeaways

The Dairy Value Chain Collaboration Colloquium generated a many insights on how to optimize East Africa's dairy value chains, and how collaboration might be used to achieve results with greater speed, inclusivity, and durable impact. Each of the 7 Challengers came away with a set of opportunities focused on the key issue he / she is working to tackle. Additionally, a number of cross-cutting themes emerged in terms of dairy value chain segments in most need of and collaborative problem solving. These cross-cutting themes include:

Farmer Training: Nearly every Challenger identified farmer training as an action necessary to taking on his or her selected challenge. Whether that training be in safe milking practices, record keeping for effective breeding, entrepreneurship, or construction of earthworm dryers, it is clear that a productive, economically robust dairy industry begins with the farmer. Bridging the knowledge gap between farmers and experts in business and science, and improving farmers' on-farm practices, could have a potentially transformative effect on the dairy industry. These positive impacts include increasing milk volume and quality. Increasing farmer skills bears the promise of raising income for farmers as well as actors further down the dairy value chain such as milk processors and heifer breeders.

Consumer Sensitization: The benefits of a formalized dairy sector are many: improved food safety, increased income for actors along the value chain, potential for export, and more. Processed dairy products provide real value to consumers; however, in Uganda and Tanzania the vast majority of milk consumed is unprocessed. The formal dairy industry can grow and prosper only if consumers recognize and appreciate the value added by processing. Participants and Challengers agreed that consumers are not passive participants in the dairy industry; their preferences directly impact choices made by breeders, farmers, processors, and others. For consumers to justify the higher price point of processed dairy products, they need a clearer understanding of why the processed products are better, safer, and more convenient. Focusing on increasing the demand for processed dairy products through consumer education and sensitization is an important facet of optimizing the East African dairy value chain.

Capitalizing on Existing Linkages: An oft-cited bottleneck to addressing many of the challenges presented during the Dairy Value Chain Collaboration Colloquium was the need to better connect farmers to service providers. These service providers include veterinarians, artificial insemination technicians, regulation experts, and more. While a farmer may have access to one type of service, they often lack access to the full suite of services that contribute to a robust, high quality dairy operation. Finding novel methods to capitalize on existing connections and improve the quality of those connections stands as a vital need, especially for isolated farmers in rural areas. In particular, participants discussed how individuals currently in contact with farmers, such as artificial insemination technicians or veterinarians, might serve multiple functions, such as assessing farmer needs, providing advice and services, and relaying concerns to other relevant parties. Seizing opportunities to increase information flows through existing service providers has the potential to radically strengthen connections in the dairy value chain and make more efficient use of limited resources.

Looking Ahead

With the many opportunities for partnership and action generated during the Dairy Value Chain Collaboration Colloquium, ample fodder exists for participants and Challengers to move forward together to address pressing challenges and take strategic action. It is the explicit goal of the event and GKI's sincerest hope that the connections made and rationales for partnership revealed will provide the foundation necessary for new collaborative efforts and solutions.

To incentivize ongoing partnership and solution development beyond the Collaboration Colloquium, the Dairy Value Chain Challenge Prize, detailed on page 28 in Annex IV, will provide a package of technical support to a winning team brought together under the auspices of the Collaboration Colloquium. The generous support of Agri-ProFocus and SNV; the Uganda Industrial Research Institute (UIRI); and the Uganda National Council for Science and Technology (UNCST) made the Prize possible. We encourage participants and Challengers to apply for this prize and to pursue the one-year visions they set. Applications are due 20 June 2014. Annex II on page 23 includes the names and contact details for participants to facilitate planning and communication. Our vision for the wake of the Collaboration Colloquium is for newly formed, action-oriented networks to build on the foundation created by this event, and ultimately develop solutions to pressing challenges in the dairy value chain. We look forward to seeing this vision come to life.

It is amazing to find that so often solutions are right under our noses! This interaction gave me great insight and I wish to remain in touch and advise each other regularly. I look forward to better challenge solving!

- James Lwerimba
Country Director, World Wide Sires
Challenger



Setting a shared vision:

Challenger Fred Kabi works with a team of participants to consider what is possible in terms of solving his challenge in one year.



Making a pitch:

Challenger Mayasa Simba shares with participants what she hopes to accomplish in one year and the resources she needs to make it happen.

Annex I: Challenger Output

The process followed during the Dairy Value Chain Collaboration Colloquium served to reveal opportunities for creating collaborative solutions to challenges in the East African dairy value chain. Collectively, Challengers and participants delved into seven key challenges, set visions for solution creation, generated 167 opportunities for collaboration, mapped 92 resources available and needed for taking action, and offered additional questions, insights, and resources. We offer on the following pages the key outputs produced by each Challenger over the course of the Collaboration Colloquium. We hope this information not only provides an accurate account of the event proceedings, but also spurs partnership planning and strategic action beyond the Colloquium.

For each Challenger, you will find his or her:

- Original challenge
- Top-three opportunities for partnership
- Vision for success in 1 year
- Top-six priority challenges/opportunities selected during challenge mapping
- Winning priority challenge/opportunity voted on during challenge mapping
- A priority action and map of available and needed resources to take that action
- The questions, insights, and resources offered by participants to help strengthen and refine each Challenger's thinking and call to action

Challenger Clayton Arinanye

General Manager; Uganda Crane Creameries Cooperative Union (UCCCU)

Clayton's Original Challenge: I seek to help farmers increase milk production and processing.

Clayton's Original Top-3 Opportunities for Partnership:

1. Creating affordable and appropriate technology to increase on-farm production
2. Training on and facilitating the adoption of both production and processing technologies by farmer communities
3. Developing and sustaining a farmer-owned processing plant

Facilitated Step 1: Identifying Goals

1-year Vision for Solution: In one year I hope to complete a farmer-owned processing plant and get processed products from that plant to the market.

Facilitated Step 2: Challenge Mapping

Working with Challenger Fred Kabi and other participants, Clayton explored opportunities and bottlenecks to reaching his 1-year vision for success. Together the group generated 48 separate opportunities for achieving this vision. Asking “what’s stopping us from completing a farmer-owned processing plant and getting those products to market?” Clayton selected the six opportunities listed below as those that are most critical to making his 1-year vision real. His team then voted among these top-6 and selected the bolded Challenge below as their top-priority. Clayton and Fred’s full Challenge Map is shown on page 25.

HMW = How might we...?

How might we establish a distribution system?

How might we get skills to do product branding?

How might we access technology to complete the processing plant?

How might we increase equity investment in the processing plant?

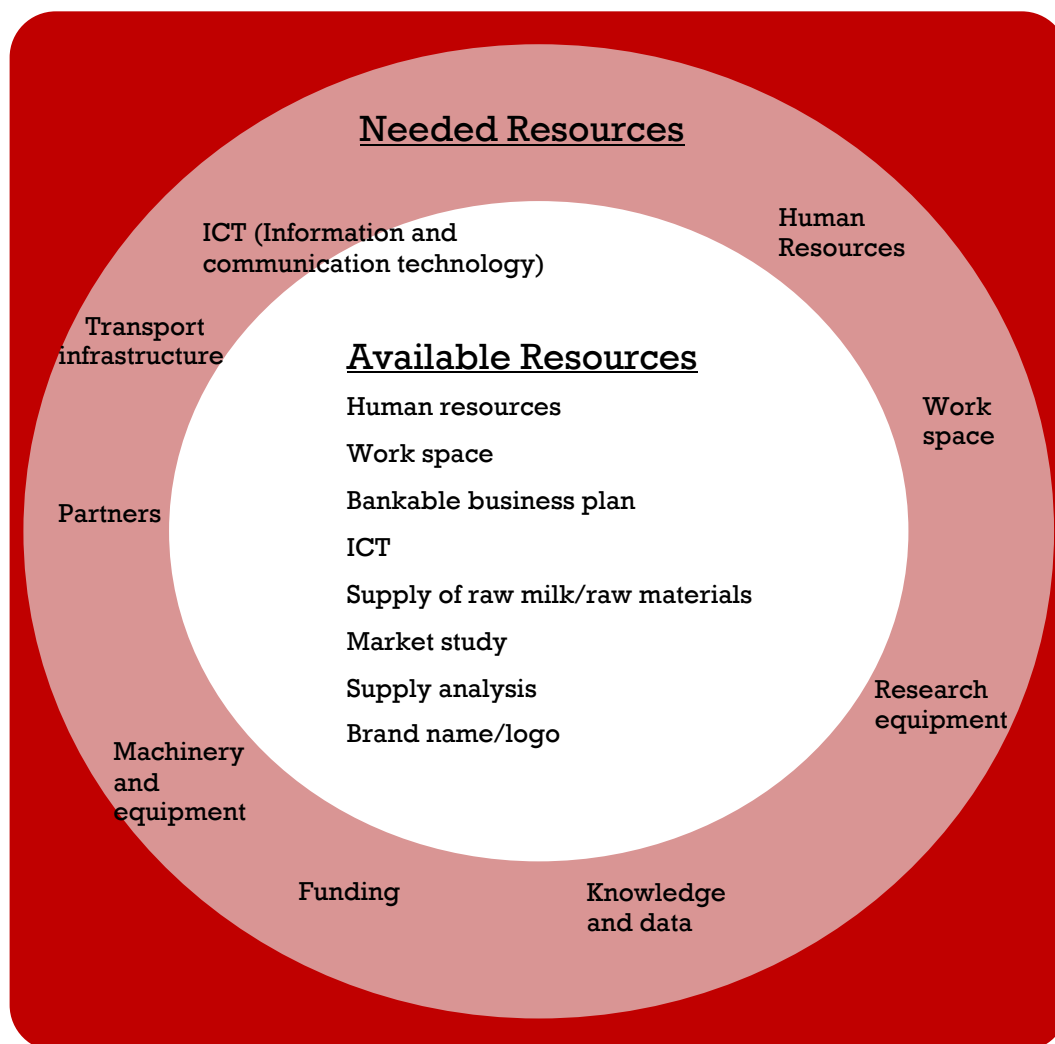
How might we acquire a soft loan for the farmer owned processing plant?

How might we get skilled personnel to manage the processing plant?

Facilitated Step 3: Identifying Resources for Action:

With consideration for the top-priority opportunity selected during challenge mapping, teams generated 5 additional actions needed to seize that opportunity. Challengers then selected 1 strategic action on which they explored resources—technologies, humans, communication-based—available within their group and those still needed to take action.

Selected Strategic Action: Get skilled personnel to work in the dairy processing plant.



Step 4: Testing and Strengthening our Ideas

After Clayton shared his “pitch” that included the challenge he seeks to solve, his vision for success, the resources he needs to achieve this vision, and his hopes for impact, participants provided the following questions, insights, and resources.

Questions

- What are the measures of starting a dairy farm? (Emma, PSFU)
- Have you considered environmental impacts of dairy farming? If yes, what measures have you taken? (Matovu Paul, Ideas for Uganda)
- Who are your identified partners & stakeholders? Have you stipulated roles on who does what? If so, make it time bound. (Carolyn Gift, Environmental Alert)
- Do you have already markets for one product? How is the project going to help the community? (Vicent Seigirime, Green Party)
- Being a business, are you recruiting farmers from other regions? What is your shareholder space? (James Lwerimba, World Wide Sires)
- How do you address the issue of apathy of the younger generation to agriculture? (Mshilla Meyhenga, Gulu University)
- Have you thought about partnering up with other producers who can help you manage the plant? (Sylvia Natukunda, Agri-ProFocus)
- Do you anticipate creating efficiency among farmers given that you want to do the role of processors? (Fred Kabi, Makerere University)

Insights

- Collaborate with stakeholders for better production, markets (Emma, PSFU)
- Sourcing and selection of skilled personnel. This is one of the biggest issues in the industry. You need to be ready to invest in fine-tuning of specialist skills of trained labor. Also invest in business management skills training of your workers. (Fiona Lukwago, Kilimo Trust)
- Consider cautious entry into processing and marketing, balances with gradual disengagement of sales to current processors. Prepare producers to have balanced expectations for challenges of business start-up. (Henry Niakoi, Heifer International)
- Specifying roles simplifies work. This should be results oriented and in a way that gets local farms involved. This will help ensure they feel a sense of ownership. (Carolyn Gift, Environmental Alert)
- Link collective farm production-processing capacity in a way that anticipates market share. (Ariong Abbey, Land O'Lakes)
- Using highly educated farmers can entice graduates to venture into dairy farming (Mshilla Meyhenga, Gulu University)

Resources

- Land (Emma, PSFU)
- Study on status of agro-industry in East Africa (Fiona Lukwago, Kilimo Trust)
- Gulu University Dept of ICT can be helpful in producing needed ICT software (Mshilla Meyhenga, Gulu University)

Challenger Fred Kabi

Senior Lecturer; Makerere University Department of Agricultural Production

Fred's Original Challenge: I seek to raise on-farm productivity by improving animal nutrition via the cultivation of earthworms.

Fred's 's Original Top-3 Opportunities for Partnership:

1. Setting up simple earthworm drying stations to enhance quality control
2. Establishing the scientific basis for using earthworms as a protein source
3. Connecting earthworm producers with feed millers and farmers to create a viable market

Facilitated Step 1: Identifying Goals

1-year Vision for Solution: In one year I hope to hold stakeholder platforms and discussions, establish a private enterprise to train and spread skills for earthworm cultivation, and train youth to construct earthworm drying equipment.

Facilitated Step 2: Challenge Mapping

Working with Challenger Clayton Arinanye and other participants, Fred explored opportunities and bottlenecks to reaching his 1-year vision for success. Together the group generated 48 such opportunities. Asking “what’s stopping us from holding stakeholder platforms, establishing a private training enterprise, and training youth to construct earthworm drying equipment?” Fred selected the six opportunities listed below as most critical to making his 1-year vision a reality. His team then voted among these top-6 and selected the bolded Challenge below as their top-priority. Fred and Clayton’s full Challenge Map is shown on page 25.

HMW = How might we...?

HMW use science to diversify enterprise in a dairy value chain?

HMW increase stakeholders' awareness of earthworm production?

HMW get partners with knowledge on construction of drying equipment?

HMW get a registered private enterprise?

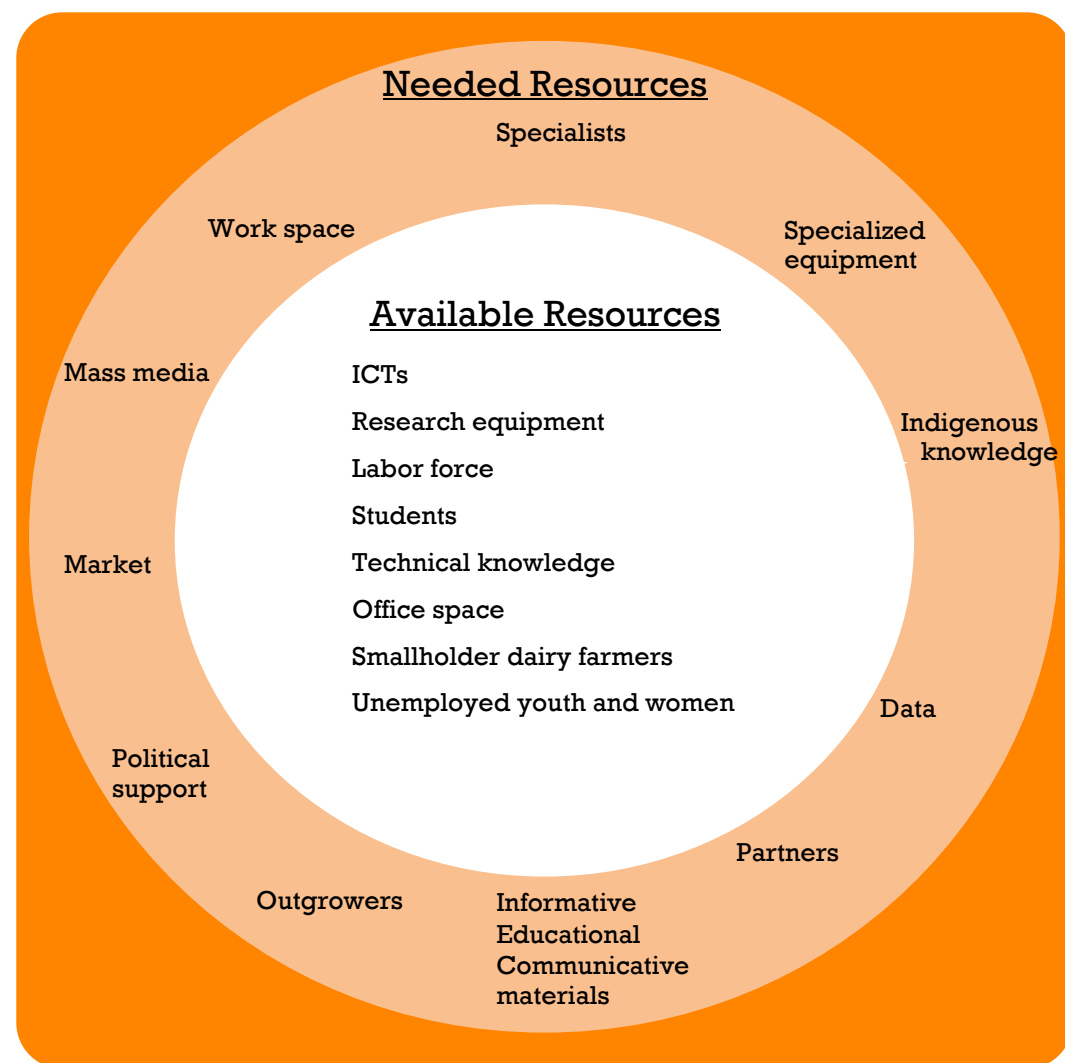
HMW generate scientific knowledge on earthworm production and utilization?

HMW collaborate with other research institutions?

Step 3: Identifying Resources for Action:

With consideration for the top-priority opportunity selected during challenge mapping, teams generated 5 additional actions needed to seize that opportunity. Challengers then selected 1 strategic action on which they explored resources—technologies, humans, communication-based—available within their group and those still needed to take action

Selected Strategic Action: Create a platform for stakeholder discussions



Step 4: Testing and Strengthening our Ideas

After Fred shared his “pitch” that included the challenge he seeks to solve, his vision for success, the resources he needs to achieve this vision, and his hopes for impact, participants provided the following questions, insights, and resources.

Questions

- Where are we looking and on what are we partnering now? (Emma, PSFU)
- Do you already have a market for this product? How is this going to benefit the community? (Vicent Seigirime, Green Party)
- Are you cooperating with micro-organizing at Makerere’s College of Agricultural and Environmental Sciences? (Matovu Paul, Ideas for Uganda)
- How will you demystify the notion that earthworms are dirty? Can worm production be commercialized by the private sector? (Mshilla Meyhenga, Gulu University)
- Have you scanned the market opportunity for earthworm? Where will you get the expertise as it is still novel? (Andogah Geoffrey, Muni University)
- What are we looking out for at this moment? Is it a research partnering or a market partnering? (James Lwerimba, World Wide Sires)
- How much protein do the cattle need for the worms? Are there cheaper ways to get protein that use worms? How will you handle quality/contamination? (Tabo Olok Geoffrey, Gulu University)
- Will you incorporate students? (James Lwerimba, World Wide Sires)
- Have you registered the process to avoid pirating of your findings? (James Lwerimba, World Wide Sires)

Insights

- It could be helpful to provide emphasized data on the resulting impact on milk yields if earthworms are included in animal feed formulation. (Ariong Abbey, Land O’Lakes)
- Tread carefully and cautiously. Wait to promote the product and not the potential, which is the case at the slope. (Henry Niakoi, Heifer International)
- It’s interesting also for birds. (Emma, PSFU)
- Consider the environmental impact of breeding earthworm. (Ariong Abbey, Land O’Lakes)
- By creating a demand you should be clear on the supply side. (Mshilla Meyhenga, Gulu University)
- I encourage you to use students. (James Lwerimba, World Wide Sires)

Resources

- Can also be used as food for the Chinese. (Emma, PSFU)
- Gulu University Faculty of Agriculture can be useful as a resource institution while the Faculty of Business can help come up with business models. (Mshilla Meyhenga, Gulu University)

Challenger James Lwerimba

Country Director; World Wide Sires Uganda

James' Original Challenge: I seek to improve farm and dairy management skills to ensure full realization of the benefits of good genetics.

James' Original Top-3 Opportunities for Partnership:

1. Identifying and accessing low-cost technologies to collect data on herds and disseminate information to farmers
2. Developing curricula and materials for training farmers on proper management
3. Advising stakeholders throughout the dairy value chain on nutrition and record keeping

Facilitated Step 1: Identifying Goals

1-year Vision for Solution: In one year I hope to harmonize best practices in management, nutrition, and data collection and get them certified for use in Uganda. I also hope to start farmer exchange visits to build awareness of best practices.

Facilitated Step 2: Challenge Mapping

Working with Challengers Billy Butamanya and Henry Njakoi and participants, James explored opportunities and bottlenecks to reaching his 1-year vision for success. Together the group generated 73 such opportunities. Asking “what’s stopping us from harmonizing and certifying best practices and holding farmer exchange visits to build awareness?” James selected the six opportunities listed below as those that are most critical to making his 1-year vision real. His team then voted among these top-6 and selected the bolded Challenge below as their top-priority. James, Billy, and Henry’s full Challenge Map is shown on page 26.

HMW = How might we...?

HMW establish model farms for farmers to visit?

HMW bring together key stakeholders to agree on the manual content?

HMW lobby policy makers to approve the manuals?

HMW raise farmer willingness to learn from each other?

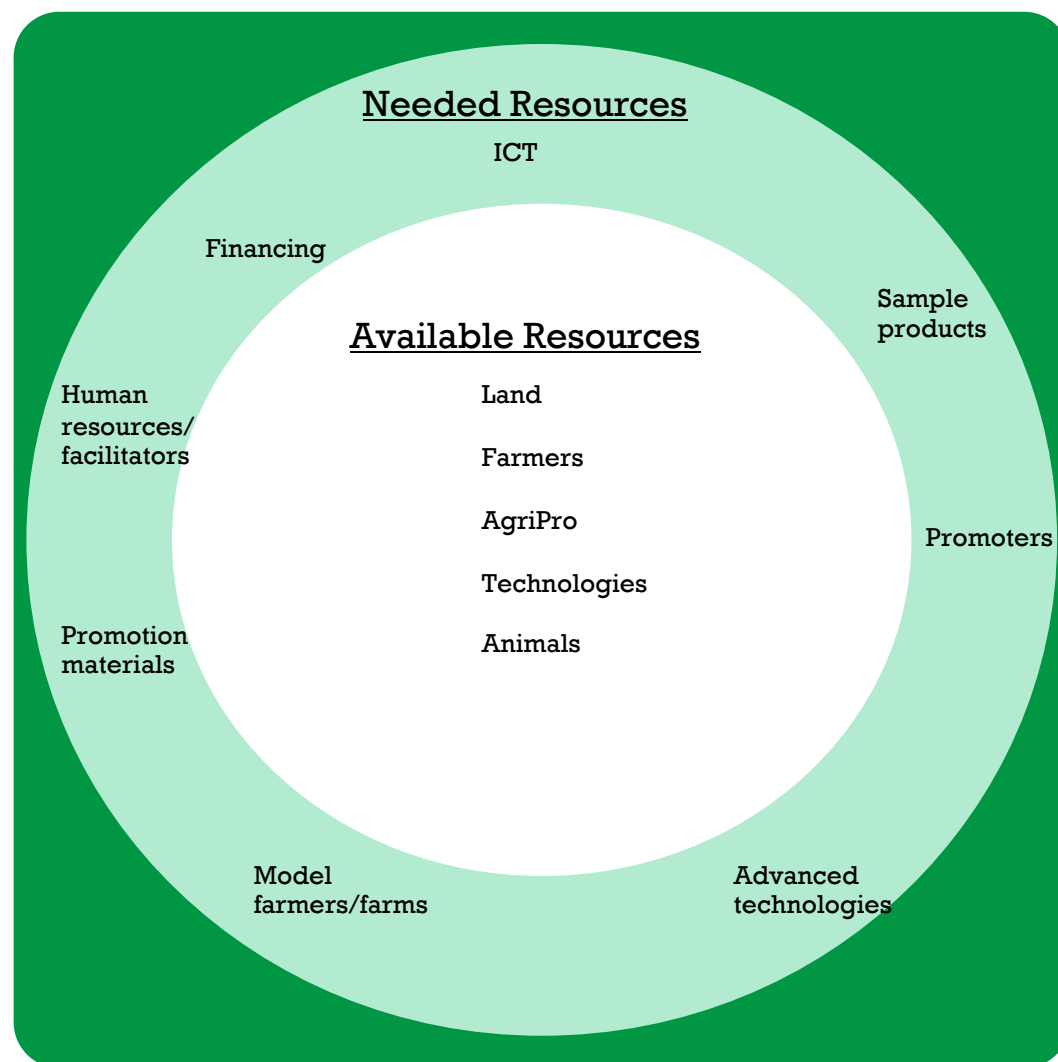
HMW bring together subject matter specialists to provide appropriate content?

HMW share the analysis of profitability of good management and genetics?

Step 3: Identifying Resources for Action:

With consideration for the top-priority opportunity selected during challenge mapping, teams generated 5 additional actions needed to seize that opportunity. Challengers then selected 1 strategic action on which they explored resources—technologies, humans, communication-based—available within their group and those still needed to take action.

Selected Strategic Action: Raise farmers' willingness to learn from one another.



Step 4: Testing and Strengthening our Ideas

After James shared his “pitch” that included the challenge he seeks to solve, his vision for success, the resources he needs to achieve this vision, and his hopes for impact, participants provided the following questions, insights, and resources.

Questions

- Do you think it's possible to breed our local animals for exotic production? (Joseph Mapgi, Busitemi University)
- How will learning improve quality of breeding? (Mshilla Meyhenga, Gulu University)
- Do you have the market already for the products? How is this going to benefit the community and the people? (Vicent Seigirime, Green Party)
- How long does it take a farmer to master how to serve a cow with artificial insemination? (Clayton Arinanye, UCCCU)
- Did you take into consideration ration-monitoring and evaluation? (unknown)
- Have you considered how you will evaluate your success? (Caroline Gift, Environmental Alert)
- Did you consider the different farming systems in different areas (i.e. zero grazing, paddock, open range)? (Ariong Abbey, Land O'Lakes)

Insights

- Knowledge is dispersed therefore all will learn from each other. (Mshilla Meyhenga, Gulu University)
- I have done mobilization and coordination for a while. We could develop on our platform; the challenge will be promoting it. To disseminate information, you have to open an account to send information to a database of organized groups you are already working with. (Matovu Paul, Ideas for Uganda)
- You should seek advice from other sectors. (Vicent Seigirime, Green Party)
- Communication and awareness will be key to achieving willingness and attitude change amongst the low levels of organization (where there is lots of conflict). (Caroline Gift, Environmental Action)
- It may be a good idea to focus on smallholders that practice the same type of feeding. (Ariong Abbey, Land o Lakes)
- I think you are assuming all farmers have land. (Balala John, Gulu University)

Resources

- Coming from a training institution, our university can help in moderating the learning. (Mshilla Meyhenga, Gulu University)
- ICT knowledge (Vicent Seigirime, Green Party)
- Agri-ProFocus is starting an online platform (P2P). (Sylvia Natukuncla, Agri-ProFocus Uganda)
- Knowledge of how to effectively organize farmers into groups and the materials needed (Caroline Gift, Environmental Alert)

Challenger Billy Butamanya

Deputy General Secretary; Uganda Cooperative Alliance

Billy's Original Challenge: I seek to improve rural farmers' access to high-quality, reliable, and affordable veterinary care.

Billy's Original Top-3 Opportunities for Partnership:

1. Developing trainings for farmers on best practices to reduce disease among cattle
2. Identifying and connecting with high-quality veterinary service providers
3. Improving channels for both service delivery and knowledge exchange between vets and farmers

Facilitated Step 1: Identifying Goals

1-year Vision for Solution: In one year I hope to establish a training program for community veterinary service providers and for that program to be adopted by veterinary training centers.

Facilitated Step 2: Challenge Mapping

Working with Challengers James Lwerimba and Henry Njakoi and participants, Billy explored opportunities and bottlenecks to reaching his 1-year vision for success. Together the group generated 73 such opportunities. Asking “what’s stopping us from establishing a training program for community veterinary service providers and getting that program adopted by veterinary training centers?” Billy selected the six opportunities listed below as most critical to making his 1-year vision real. His team then voted among these top-6 and selected the bolded Challenge below as their top-priority. Billy, James, and Henry’s full Challenge Map is shown on page 26.

HMW = How might we...?

HMW raise demand for graduates of the training programs?

HMW develop training modules for extension vets?

HMW sensitize farmers to the program's use and effectiveness?

HMW train the trainers for the training program?

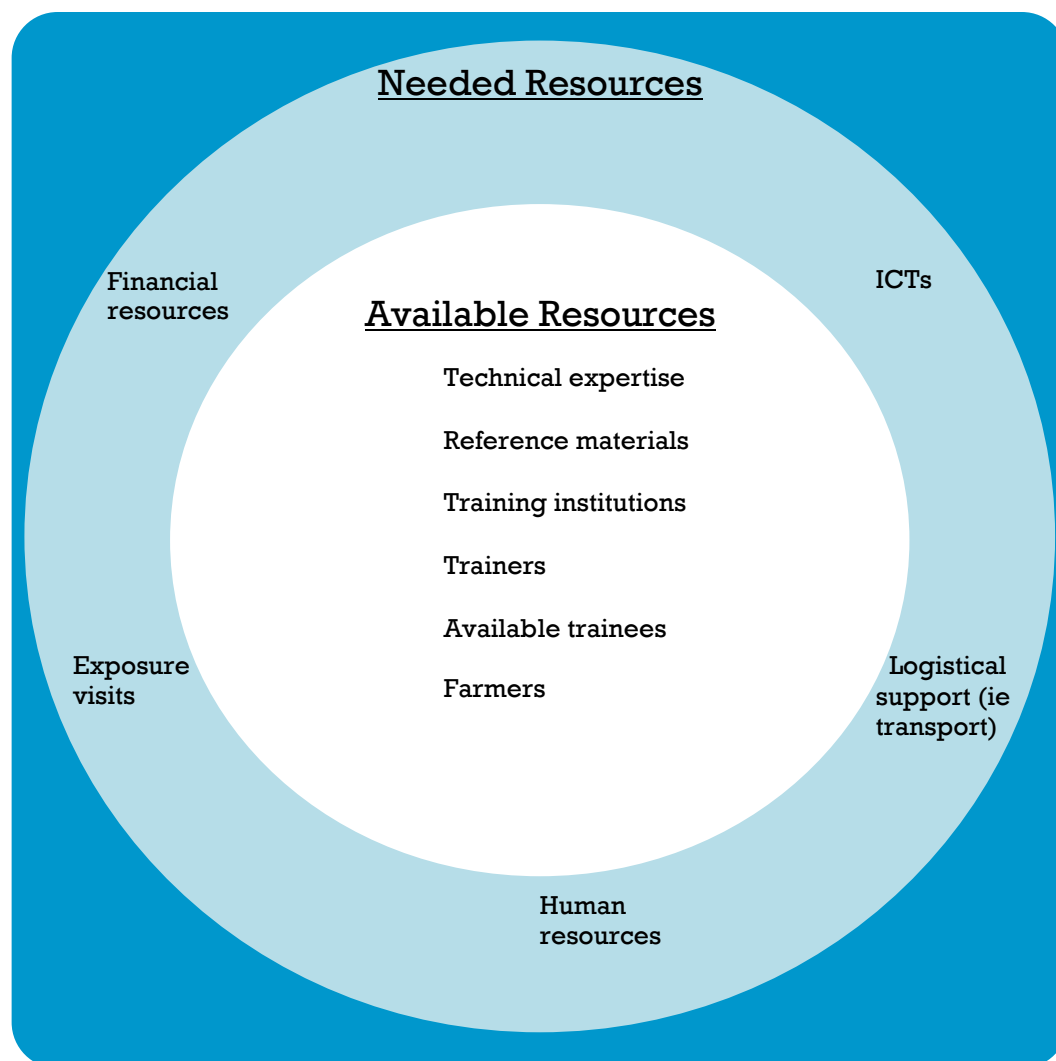
HMW make vet practice more attractive to practitioners?

HMW get the training programs approved by the relevant authorities?

Step 3: Identifying Resources for Action:

With consideration for the top-priority opportunity selected during challenge mapping, teams generated 5 additional actions needed to seize that opportunity. Challengers then selected 1 strategic action on which they explored resources—technologies, humans, communication-based—available within their group and those still needed to take action.

Selected Strategic Action: Develop training modules for extension veterinarians.



Step 4: Testing and Strengthening our Ideas

After Billy shared his “pitch” that included the challenge he seeks to solve, his vision for success, the resources he needs to achieve this vision, and his hopes for impact, participants provided the following questions, insights, and resources.

Questions

- How will monitoring and evaluation be carried out? (Mshilla Meyhenga, Gulu University)
- What possibility do you use to generate info, for example, at university all university students? (Emma, PSFU)
- Have you looked at the current system in country where the District Production Officer is in charge of extension sources? (James Lwerimba, World Wide Sires)
- Do you plan to use students to help you generate information? (Fred Kabi, Makerere University)

Insights

- The best training model should be developed with the input of the farmers. (Mshilla Meyhenga, Gulu University)
- Caution: Ensure that the learning visits are self-motivated otherwise will other forms of “development tourism.” (Henry Njakoi, Heifer International)
- We have to enforce zoning in different areas for effective service provision and regulation. (James Lwerimba, World Wide Sires)
- Students are a reliable source of data. (Fred Kabi, Makerere University)

Resources

- Gulu University Faculty of Agriculture can be helpful in providing resource persons. (Mshilla Meyhenga, Gulu University)
- University students. (Emma, PSFU)
- The Makerere University College of Agriculture already has students ready to go for attachment with private sector as future employees. (Fred Kabi, Makerere University)

Challenger Henry Njakoi

Country Director; Heifer International Tanzania

Henry's Original Challenge: I seek to leverage the technologies and innovations of the private sector to increase the production of quality heifers.

Henry's Original Top-3 Opportunities for Partnership:

1. Catalyzing private sector led solutions to increase the production of appropriate heifers
2. Identifying and accessing appropriate breeding and recording schemes for commercial dairy farms
3. Developing business models for heifer production to facilitate access to capital investment and relevant knowledge

Facilitated Step 1: Identifying Goals

1-year Vision for Solution: In one year I hope to develop a profitable business model for commercial heifer production and pilot that model for upscaling.

Facilitated Step 2: Challenge Mapping

Working with Challengers Billy Butamanya and James Lwerimba and participants, Henry explored opportunities and bottlenecks to reaching his 1-year vision for success. Together the group generated 73 such opportunities. Asking “what’s stopping us from developing a profitable business model for commercial heifer production and piloting that model?” Henry selected the six opportunities listed below as most critical to making his 1-year vision real. His team then voted among these top-6 and selected the bolded Challenge below as their top-priority. Henry, Billy, James’ full Challenge Map is shown on page 26.

HMW = How might we...?

HMW access appropriate technical assistance for breeding schemes?

HMW help private farmers appreciate this as a business?

HMW prepare a cost-benefit analysis for commercial heifer production?

HMW access good quality genetic material?

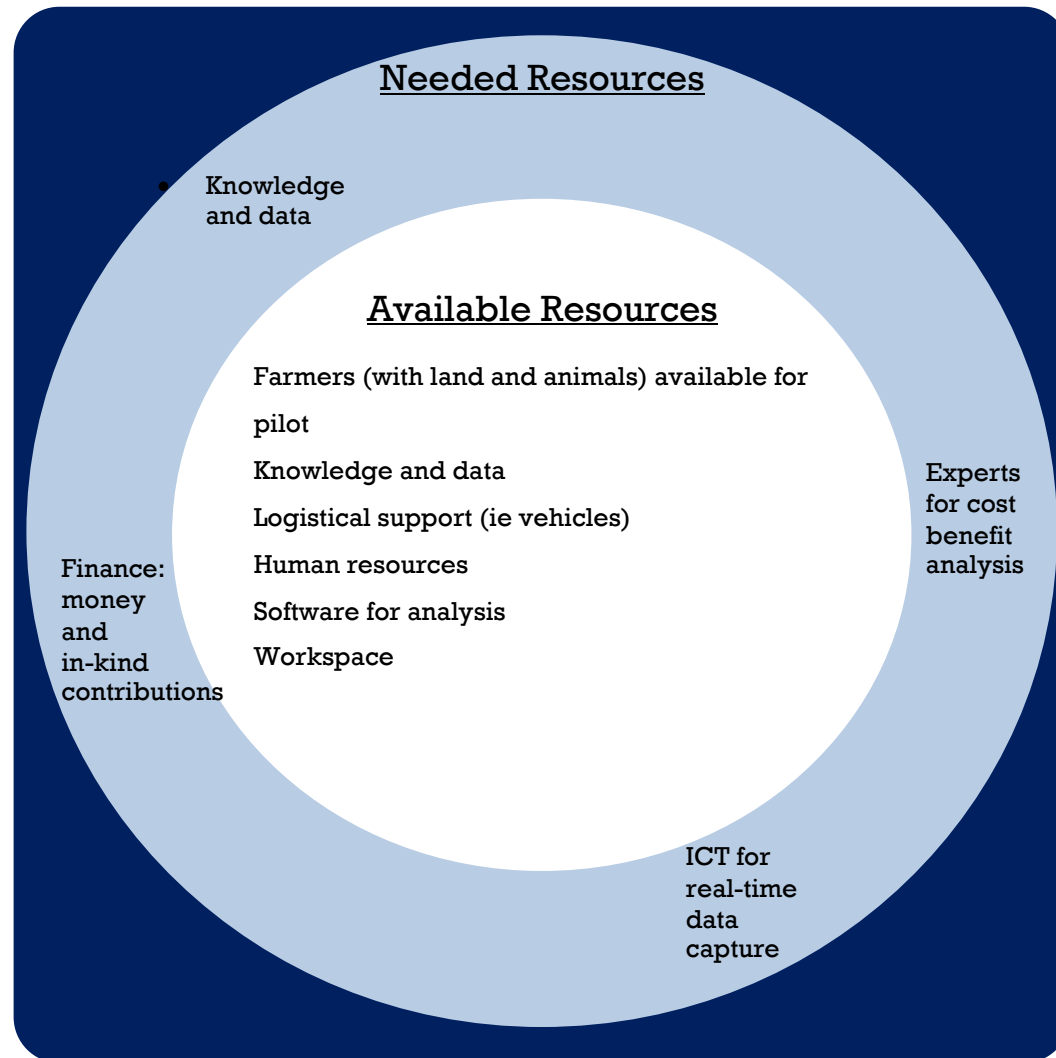
HMW identify private sector champions to pilot selected models?

HMW conduct comprehensive economic analysis of various models?

Step 3: Identifying Resources for Action:

With consideration for the top-priority opportunity selected during challenge mapping, teams generated 5 additional actions needed to seize that opportunity. Challengers then selected 1 strategic action on which they explored resources—technologies, humans, communication-based—available within their group and those still needed to take action.

Selected Strategic Action: Conduct a cost-benefit analysis for commercial heifer production.



Step 4: Testing and Strengthening our Ideas

After Henry shared his “pitch” that included the challenge he seeks to solve, his vision for success, the resources he needs to achieve this vision, and his hopes for impact, participants provided the following questions, insights, and resources.

Questions

- How will the business model be sustainable among the farmer? (Clayton Arinanye, UCCCU)
- How will cost-benefit analysis best address your challenge? (Dr. Mshilla Maghanga, Gulu University)
- What type of ICT's to be done for a region/district? (Emma, PSFU)
- Where in the value chain do you intend to put emphasis (buyers, consumers, breeders)? (Fred Kabi, Makerere University)
- Is Heifer International already established in Uganda? (Matovu Paul, IDEAS for Uganda)
- Do you already have a market for the products? (Seicurime Vincent, Green Party)
- Would you consider access to finance for farmers to be able to access the good heifers? (unknown)

Insights

- Cost benefit analyses will be meaningful if shared with the farmers. (Dr. Mshilla Maghanga, Gulu University)
- Assess for farmers ability to get the financing. (Emma, PSFU)
- Should always seek advisors from other sectors. (Seigirime Vincent, Green Party)

Resources

- Gulu University ICT department can develop ICT cost benefit analysis software. (Dr. Mshilla Maghanga, Gulu University)
- We can use the Livestock Multiplication Units for as a basis to multiply heifers and explore the business model they are applying (Mayasa Simba, Tanzania Dairy Board)
- Contact us for further collaboration. (Emma, PSFU)
- IDEAs Uganda has regional groups in communities with which you could work. (Matovu Paul, IDEAS for Uganda)
- Would share knowledge of ICT. (Seigirime Vincent, Green Party)

Challenger Tom Sillayo

General Manager; Faida Market Link (Faida MaLi)

Tom's Original Challenge: I seek to help farmers maintain market access by producing milk of reliable volume and quality.

Tom's Original Top-3 Opportunities for Partnership:

1. Developing training on animal husbandry to improve feeding practices, among many others
2. Conduct training in organizing, farming as business, marketing, contracting, and skills such as value addition
3. Determining and developing safe, hygienic training/methods for milking, handling, and transporting milk

Facilitated Step 1: Identifying Goals

1-year Vision for Solution: In one year I hope to develop a training manual in animal husbandry and begin mobilizing farmers.

Facilitated Step 2: Challenge Mapping

Working with Challenger Mayasa Simba and other participants, Tom explored opportunities and bottlenecks to reaching his 1-year visions for success. Together the group generated 46 such opportunities. Asking “what’s stopping us from developing an animal husbandry training manual and mobilizing farmers?” Tom selected the six opportunities listed below as most critical to making his 1-year vision real. His team then voted among these top-6 and selected the bolded Challenge below as their top-priority. Tom and Mayasa’s full Challenge Map is shown on page 27.

HMW = How might we...?

HMW
improve
communicat-
ion?

HMW
network with
funders?

HMW
develop a
curriculum
to train
farmers?

**HMW
ensure milk
quality?**

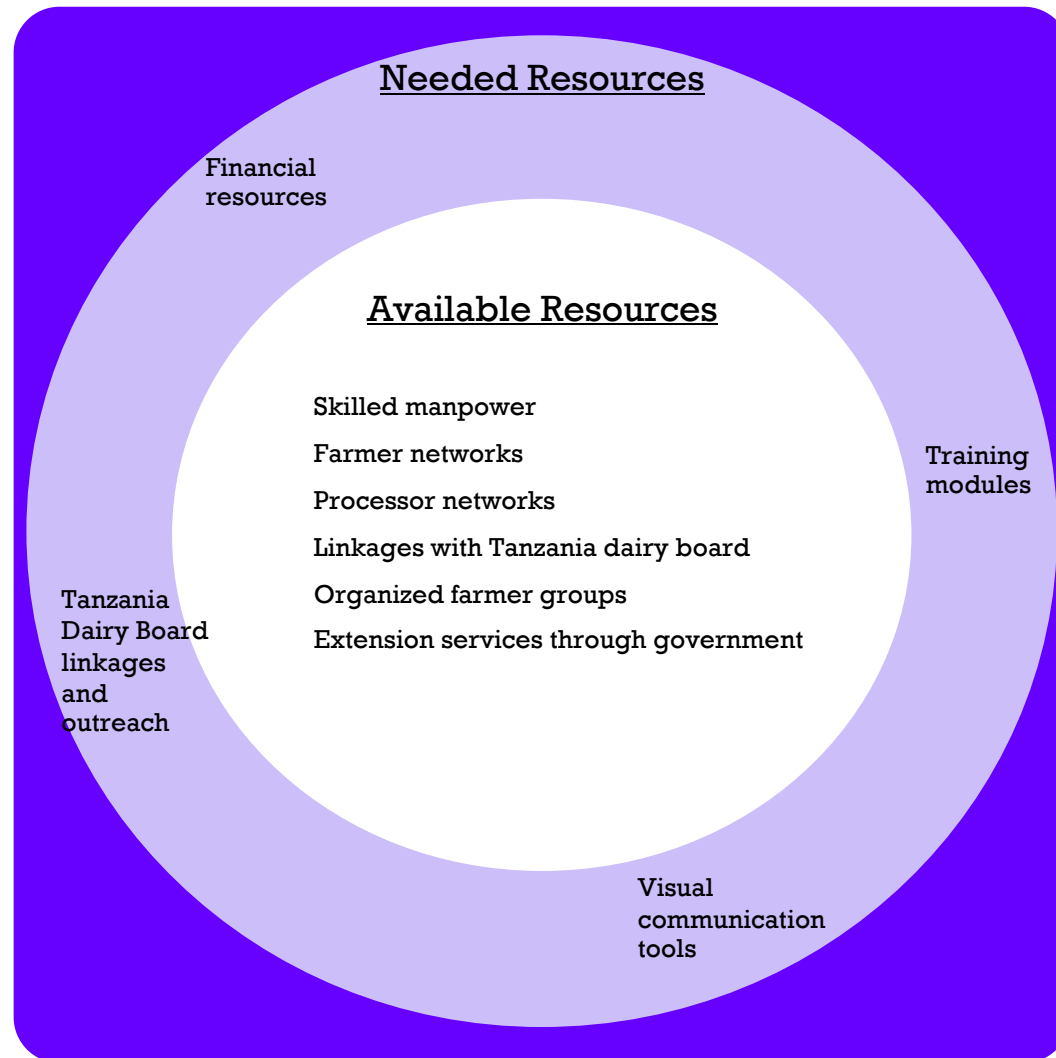
HMW get the
farmers
organized?

HMW get
financial
assistance to
develop
manuals?

Step 3: Identifying Resources for Action:

With consideration for the top-priority opportunity selected during challenge mapping, teams generated 5 additional actions needed to seize that opportunity. Challengers then selected 1 strategic action on which they explored resources—technologies, humans, communication-based—available within their group and those still needed to take action.

Selected Strategic Action: Build awareness and train farmers on milk hygiene and handling.



Step 4: Testing and Strengthening our Ideas

After Tom shared his “pitch” that included the challenge he seeks to solve, his vision for success, the resources he needs to achieve this vision, and his hopes for impact, participants provided the following questions, insights, and resources.

Questions

- What’s the particular area for the training? (Emma, PSFU)
- Have you used the Top-Bottom approach to have consumers agitate for quality from producers? What exactly is your target group? Small scale or large scale farmers? (Matovu Paul, Ideas for Uganda)
- What is actually meant by the quality of milk? (Mshilla Meyhenga, Gulu University)
- Are you involving the Sokoine University of Agriculture to generate new knowledge that can be published for international readership? (Fred Kabi, Makerere University)

Insights

- Sensitize the consumer to understand the insights. (Emma, PSFU)
- Reconsider including common hazards used by unscrupulous people in an attempt to evade quality measures and other means of milk preservation in your curriculum to increase awareness of potential danger to consumers. (Ariong Abbey, Land O’Lakes International Development)
- It is said that the customer is the best assessor of quality. (Mshilla Meyhenga, Gulu University)
- Please consider the sensitization of consumers to appreciate the value added to milk!! (James Lwerimba, World Wide Sires)

Resources

- Gulu University of Agriculture can be a resource institution. (Mshilla Meyhenga, Gulu University)

Challenger Mayasa Simba

Acting Registrar (CEO); Tanzania Dairy Board

Mayasa's Original Challenge: I seek to incentivize awareness, understanding, and compliance with regulations in the dairy value chain.

Mayasa's Original Top-3 Opportunities for Partnership:

1. Developing training modules and disseminating hygiene manuals to encourage and reward safe practices
2. Customizing quality assurance methods for informal milk channels
3. Identifying and registering dairy actors in a cost-effective, user-friendly manner

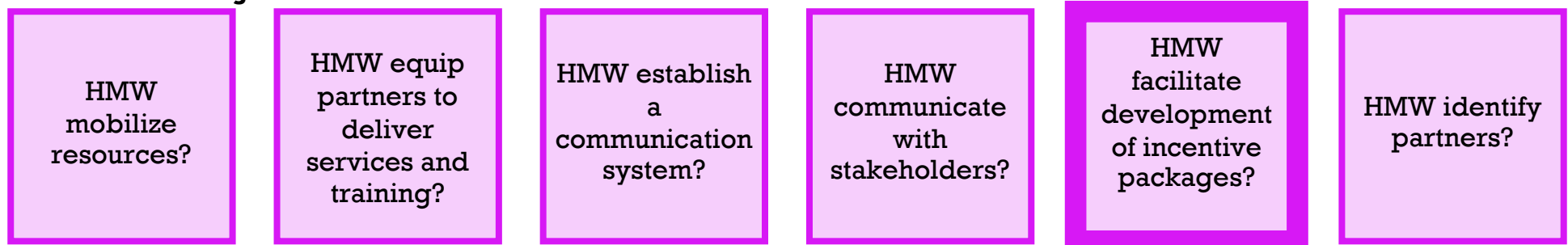
Facilitated Step 1: Identifying Goals

1-year Vision for Solution: In one year I hope to incentivize registration of actors in the dairy value chain and compliance with regulation. I also hope to connect with local government partners and have more organized dairy industry actors.

Facilitated Step 2: Challenge Mapping

Working with Challenger Tom Sillayo and participants, Mayasa explored opportunities and bottlenecks to reaching her 1-year vision for success. Together the group generated 46 such opportunities. Asking “what’s stopping us from incentivizing registration and compliance among dairy value chain actors; and what’s stopping us from connecting with local governments and creating a more organized dairy industry?” Mayasa selected the six opportunities listed below as most critical to making her 1-year vision real. Her team then voted among these top-6 and selected the bolded Challenge below as their top-priority. Mayasa and Tom’s full Challenge Map is shown on page 27.

HMW = How might we...?

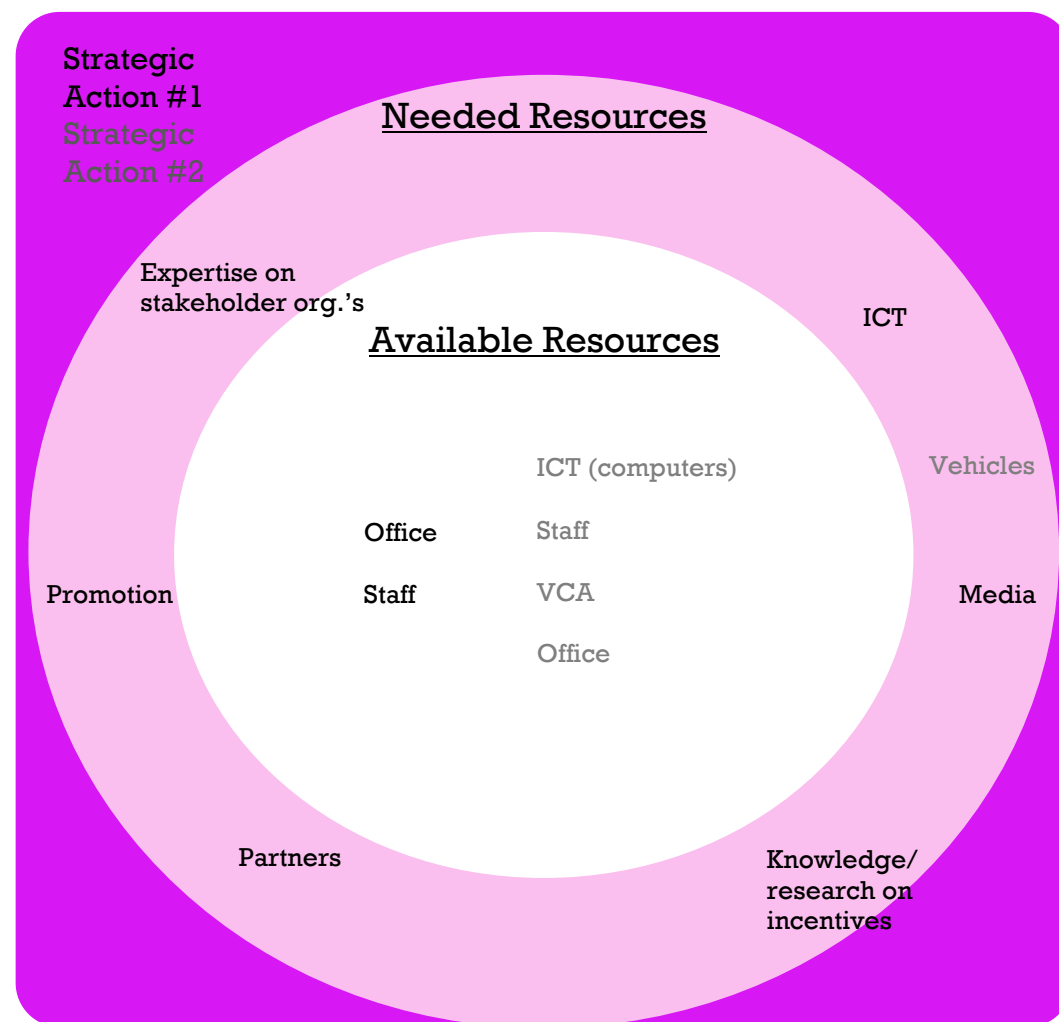


Step 3: Identifying Resources for Action:

With consideration for the top-priority opportunity selected during challenge mapping, teams generated 5 additional actions needed to seize that opportunity. Challengers then selected 1-2 strategic action on which they explored resources—technologies, humans, communication-based—available within their group and those still needed to take action.

Selected Strategic Action 1: Develop incentive packages for compliance and registration.

Selected Strategic Action 2: Assess needs and identify best practices.



Step 4: Testing and Strengthening our Ideas

After Mayasa shared her “pitch” that included the challenge he seeks to solve, his vision for success, the resources he needs to achieve this vision, and his hopes for impact, participants provided the following questions, insights, and resources.

Questions

- Are you planning to engage universities i.e. Sokoine University of Agriculture so that you generate new knowledge for international use? (Fred Kabi, Makerere University)
- What incentives/attractive approaches will entice farmers to register? (Mshilla Meyhenga, Gulu University)
- How are you protecting incentives from corruption? (Matovu Paul, Ideas for Uganda)

Insights

- I believe it's important to start by figuring out how to get government backing (including increasing budget support to your entity) before you look anywhere. (Joseph Mpagi, Butisema University Faculty of Health Sciences)
- If the process is incentive based, it may not be sustainable once incentives dwindle. (Mshilla Meyhenga, Gulu University)

Resources

- ICT knowledge (Vicent Seigirime, Green Party)
- Gulu University ICT Department can be helpful in developing data capturing software (Mshilla Meyhenga, Gulu University)

Annex II: Participants

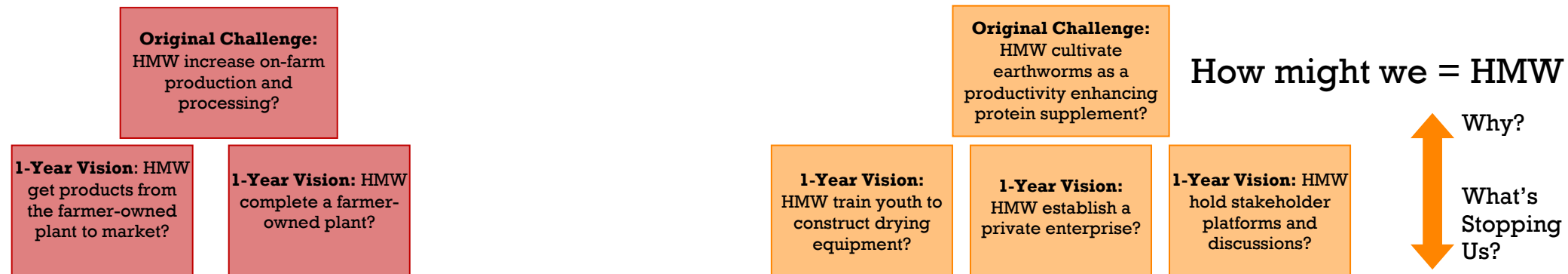
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Lies Huizink			lies.huizink@bluewn.ch

Annex III: Challenge Maps

Value Addition Cluster:

Challengers **Clayton Arinanye** and **Fred Kabi** (48 total opportunities)



Clayton's Top-6 opportunities

- HMW get skilled personnel to manage the processing plant?
- HMW acquire a soft loan for the farmer-owned processing plant?
- HMW increase equity investment in the processing plant?
- HMW access technology to complete the plant?
- HMW get skills to do product branding?
- HMW establish a distribution system?

Fred's Top-6 opportunities

- HMW use science to diversify enterprise in a dairy value chain?
- HMW increase stakeholders awareness of earthworm production?
- HMW get partners with knowledge on construction of drying equipment?
- HMW get a registered private enterprise?
- HMW generate scientific knowledge on production and utilization?
- HMW collaborate with other research institutions?

Additional opportunities generated by Clayton, Fred, and participants

- HMW improve the livelihoods of smallholder farmers?
- HMW increase and improve extension services to dairy farmers?
- HMW mobilize more farmers to join cooperatives to have collective marketing?
- HMW collaborate with researchers to introduce efficient farm technologies?
- HMW train farmers on quantity and quality of milk production?
- HMW train producers to brand their products?
- HMW sensitize consumers to the value of nutrients in the milk products?
- HMW advertise our products?
- HMW enter the market for processed milk products?
- HMW lobby the government to subsidize processing plant equipment?
- HMW get success stories of farmer-owned dairy processing plants?
- HMW get youth interested in learning skills for drying equipment construction?
- HMW understand the demand from people?
- HMW get access to technicians to train youth in solar drier systems?
- HMW have a feasibility study carried out?

- HMW establish the economic viability of an enterprise?
- HMW get resources to acquire the services of knowledgeable partners?
- HMW change the attitudes of youth?
- HMW sensitize farmers to get interested as stakeholders?
- HMW get success stories of the same project?
- HMW identify the needed scientists?
- HMW get stakeholders interested?
- HMW generate a critical mass of scientists in earthworm production?
- HMW increase the public's access to scientific information?
- HMW increase access to scientific publications and journals?
- HMW acquire support from the government (e.g. capital)?
- HMW commercialize scientific knowledge?
- HMW subscribe for easy access to scientific databases?
- HMW access the necessary equipment for scientific research?

How might we = HMW

Why?

What's
Stopping
Us?

Animal Health and Breeding Cluster:

Challengers **James Lwerimba**, **Billy Butamanya**, and **Henry Njakoi** (73 total opportunities)

Original Challenge:
HMW improve on-farm
mgmt. to realize benefits
of good genetics?

Original Challenge:
HMW improve farmers'
access to high quality,
reliable veterinary care?

Original Challenge
HMW leverage private
sector to increase
production of good
heifers?

1-Year Vision:
HMW harmonize
best practice
manuals in mgmt.,
nutrition, and data
collection?

1-Year Vision:
HMW get a
harmonized
manual certified
in Uganda?

1-Year Vision:
HMW establish
farmer
exchange visits?

1-Year Vision:
HMW establish a
training program
for community vet
service
providers?

1-Year Vision:
HMW help
veterinary
training centers
adopt this
program?

1-Year Vision:
HMW develop a
profitable
business model
for commercial
heifer production?

1-Year Vision:
HMW pilot the
new business
model?

1-Year Vision:
HMW upscale
profitable
business models
for heifer
production?

James's Top-6 opportunities

HMW raise farmers' willingness to learn from each other?
HMW establish model farms for farmers to visit?
HMW bring together key stakeholders to agree on the content of training manuals?
HMW lobby policy makers to approve the manuals?
HMW bring together the subject matter specialists to provide content for the manuals?
HMW share the analyses of profitability of good management and genetics?

Billy's Top-6 opportunities

HMW develop training modules for extension veterinarians?
HMW get the training programs approved by the relevant authorities?
HMW make veterinary practice more attractive to practitioners?
HMW train the trainers for the training programs?
HMW sensitize the farmers about the program's use and effectiveness?
HMW raise demand for graduates of the training programs?

Henry's Top-6 opportunities

HMW prepare a cost-benefit analysis for commercial heifer production?
HMW access good quality genetic material?
HMW get private farmers to appreciate this as a business?
HMW access appropriate technical assistance to design affordable breeding schemes?
HMW identify private sector champions to pilot selected models?
HMW conduct comprehensive economic analysis of various models?

Additional opportunities generated by James, Billy, Henry, and participants

HMW conduct simple cost-benefit analyses of good management and data collection?
HMW get farmers using good practices to accept visits?
HMW provide farmers with the adequate funds?
HMW sensitize local leaders?
HMW develop clear breeding policy?
HMW compile existing manuals and training materials?
HMW establish modern demonstration farms for knowledge sharing and dissemination?
HMW sensitize farmers on proper management and data collection?
HMW get scientists and stakeholders together for formulation?
HMW get government support?
HMW finance farmer exchange visits?
HMW better spark the existing pattern of extension services at all levels?
HMW communicate to illiterate farmers about the health of their animals?
HMW assess existing business models for viability in East Africa?

HMW convince farmers to participate in the training programs?
HMW increase farmers' appreciation of quality veterinary services?
HMW get access remote farmers?
HMW provide services through paraveterinary teams?
HMW secure government recognition and approval of community veterinary service providers?
HMW set up veterinary centers for farmers?
HMW encourage the government to extend the training program to different villages?
HMW provide more trained veterinarians?
HMW develop the relevant training programs?
HMW agree on the content of community veterinary services?
HMW recruit community-based veterinary practitioners?
HMW develop an acceptable veterinary regulatory system?
HMW make community veterinary service attractive and profitable to vets and vet technicians?
HMW overcome to do the making markets work for the poor approach and private sector engagement at the farmer's doorstep?
HMW develop a regular vaccination plan?
HMW prepare a feasibility study for commercial dairy heifer production?

HMW develop a common charge system in a region?
HMW raise interest and encourage training centers to adopt the training program?
HMW commercialize smallholders?
HMW motivate farmers to start up private businesses?
HMW showcase the impacts of growing productivity and entrepreneurship?
HMW convince farmers or businesspersons to adopt the business model?
HMW supervise and educate farmers on good heifer production?
HMW act as private player by establishing a model farm?
HMW acquire trained staff to pilot the new business model?
HMW get competent people to develop the business model for heifer production?
HMW get good examples of business models to learn from?
HMW establish criteria for upscaling the model?
HMW sensitize farmers on the profitable outputs from the business models?
HMW get resources to aid farmers in implementing the business model?

Milk Quality and Volume Cluster:

Challengers **Tom Sillayo** and **Mayasa Simba** (46 total opportunities)



Tom's Top-6 opportunities

- HMW ensure milk quality?
- HMW get financial assistance to develop training manuals?
- HMW network with funders?
- HMW develop a curriculum to train farmers?
- HMW improve communication with farmers?
- HMW get the farmers organized?

Mayasa's Top-6 opportunities

- HMW facilitate the development of incentive packages?
- HMW mobilize resources?
- HMW equip partners to deliver services and training?
- HMW establish a communication system?
- HMW communicate with stakeholders?
- HMW identify partners?

Additional opportunities generated by Tom, Mayasa, and participants

- HMW establish farmer organizations?
- HMW identify incentives for registration and compliance
- HMW create awareness of incentives?
- HMW understand stakeholders' communication style?
- HMW develop training modules for partners?
- HMW collaborate with partners?
- HMW generate information on stakeholders?
- HMW train partners?
- HMW help value chain actors understand the dairy industry regulation?
- HMW identify stakeholders?
- HMW establish value chain actor organizations?
- HMW assess current farm practices?
- HMW access information?
- HMW identify other partners?
- HMW hire experts?
- HMW identify experts in animal husbandry?

- HMW train farmers? (x2)
- HMW improve proposal writing for funding?
- HMW know how best to communicate (e.g. e-mail, phone, etc)?
- HMW access farmers?
- HMW set quality standards?
- HMW get funding for mobilizing farmers?
- HMW get partners to support mobilization?
- HMW communicate with farmers?
- HMW get feedback from consumers and farmers?
- HMW protect consumers' health?
- HMW promote farmer products?
- HMW help farmers know the quality standards?
- HMW locate existing animal husbandry manuals?

Annex IV: Dairy Value Chain Challenge Prize

REQUEST FOR PROPOSALS

INTRODUCTION AND GUIDANCE

While the challenges facing East Africa's dairy value chain are substantial, innovators have the potential to find opportunities to optimize it, and in doing so improve the lives of thousands—if not millions—of farmers. To incentivize durable, innovative partnerships and solutions to challenges in East Africa's dairy value chain the Global Knowledge Initiative (GKI) organized a challenge prize. With generous offers from Agri-ProFocus and SNV Netherlands Development Organisation, the Uganda National Council for Science and Technology (UNCST), and the Uganda Industrial Research Institute (UIRI), the Dairy Value Chain Challenge Prize will award collaborative teams in their efforts to take collaborative action to tackle challenges in the dairy value chain to by providing a package of **training, consultation, and strategic connections and services**. We will award this prize to teams of researchers, practitioners, and other stakeholders participating in the 8 May, 2014 Dairy Value Chain Collaboration Colloquium who wish to take strategic, collaborative action to solve a selected challenge in the East African dairy value chain.

The Prize Package includes:

From: Agri-ProFocus and SNV

Offer: Agri-ProFocus and SNV offer a consultation call with their leadership. Based on the needs of the winning team and project, leaders will recommend and connect you to potential strategic collaborators within their network of NGOs, and public and private sector partners.

From: Uganda Industrial Research Institute (UIRI)

Offer: UIRI offers a consultation with their leadership. Based on the needs of the winning team and project, leaders will recommend and connect you to UIRI services such as the UIRI test house, agro production lab, and/or UIRI's Technology Development center.

From: Uganda National Council for Science and Technology (UNCST)

Offer: UNCST offers a special session of their tested Intellectual Property (IP) Clinic to the winning team. This clinic can help strengthen your understanding of the IP landscape in which you are innovating and taking action.

Objectives of the Challenge Prize

- Develop strong linkages between leading organizations and innovative Challengers working to solve challenges in the dairy value chain
- Incentivize ongoing collaboration between Dairy Value Chain Collaboration Colloquium participants
- Support strategic, collaborative action to solving challenges in the East African dairy value chain

Method of Selection

Applications are to be submitted by collaborative teams that include diverse actors, such as scientists, development practitioners, and government officials. At least one principal investigator on each team must be a Dairy Value Chain Collaboration Colloquium Challenger. Seven Collaboration Colloquium Challengers have been nominated by dairy value chain experts; GKI will highlight their work and challenges during the Collaboration Colloquium. A Technical Review Committee made up of researchers, practitioners, and development leaders will choose the winning team. The **Technical Review Committee will judge applications based on the potential for impact in 1 year in terms of the actions to be taken, the feasibility of the proposed actions, the proposed use of the prize and shared resources**, and other characteristics.

Timeline for the Challenge Prize

Below, see relevant dates for applying to, beginning activities for, and reporting on the Dairy Value Chain Challenge Prize.

Action	Anticipated Completion Date
Dairy Value Chain Collaboration Colloquium	8 May, 2014
Partners submit completed proposals to GKI, which ensures distribution to the Technical Review Committee	20 June, 2014
Prize winner announced by the Technical Review Committee	9 July, 2014
6-month update call	January 2015
12-month update call	July 2015

Eligibility to Contend for the Challenge Prize

The Dairy Value Chain Challenge Prize selection process begins with a team submitting a proposal to the Technical Review Committee. Each team must include 2-3 principal investigators (PIs). The PIs, who must be identified in the proposal, will serve as lead points of contact with GKI, the Technical Review Committee and the coordinators of their institutions' involvement. **At least one PI must be a Dairy Value Chain Collaboration Colloquium Challenger.** Beyond the PIs, additional researchers, practitioners, students, and other stakeholders may also be included on submissions.

A template for the proposal to be submitted by the PIs can be found on page 32. **To be considered for the prize, PIs must answer each of the questions provided in the template to the best of their ability. Responses to these questions should be captured in no more than 5 pages, using 11-point font.** Teams with multiple PIs should complete a single team proposal. PIs are asked to submit the completed proposal via e-mail to GKI's Courtney O'Brien (courtney@gkinitiative.org), **by 20 June, 2014**. We will then send proposals to the Technical Review Committee for review.

Proposal Review Process

Upon submission to the Technical Review Committee, the committee will read and evaluate proposals, using the criteria described below. Technical Review Committee members will then make a recommendation as to the proposal that best meets the priorities of the Challenge Prize. Criteria for Technical Review Committee review of proposals include:

- *Proposal design (timeline, feasibility, etc.):* The Technical Review Committee will judge proposals based on the potential for impact in 1 year and the feasibility of the proposed actions, as well as how strategically and efficiently the applicants seek to share resources and use the prize offerings.
- *Track Record of the PIs (and other team members):* The Technical Review Committee will seek out individuals who have robust experience in dairy value chains and scientific/socio-economic research implementation. Teams may include individuals with varying levels of experience, but teams should include at least some members with strong research and/or implementation experience.

Expectations of the Winning Team

Should the PIs' proposal be selected as a Dairy Value Chain Challenge Prize Winner, **the PIs commit to:**

- Coordinate the PIs' departments'/institutions'/companies' involvement.
- Provide speedy responses and feedback to the Technical Review Committee and GKI.
- Liaise with GKI to connect with prize supporting organizations Agri-ProFocus and SNV, UIRI, and UNCST.
- Provide an up-to-date account of activities and progress via periodic briefings with GKI.

Commitments of the Prize Organizers

Once the prize has been awarded, **GKI commits to the following:**

- Communicate the progress of the winning team to outside parties and potential collaborators.

- Identify opportunities to link the winning team to other GKI-sponsored events, trainings, convenings, etc.

DAIRY VALUE CHAIN CHALLENGE PRIZE

PROPOSAL TEMPLATE

Part I: Contact Information for the Principal Investigators

1. Name(s) of Principal Investigator(s)
2. Role at institution (faculty member, administrator, firm manager etc.)
3. Institution
4. Full contact information (Mailing Address, Cell Phone Number, Office Phone Number, Email Addresses)

Part II: Exploration of the Challenge and Proposed Actions

CHALLENGE STATEMENT

1. What challenge in the East African dairy value chain are you addressing?
2. What actions do you propose taking to meet this challenge? Please give details regarding the nature of the actions and how you plan to take these actions.
3. How will your proposed actions meet the challenge? How many people will benefit from these actions if you succeed in accomplishing them?
4. Have you tried taking these actions before? How might your proposed team improve your chance of success and impact?
5. What progress do you expect to achieve in taking action by January 2015? By July 2015? The Technical Review Committee encourages the inclusion of a timeline.

PROPOSED USE OF PRIZE

6. How will the support offered by the prize (Agri-ProFocus and SNV, services from UIRI, and training from UNCST) help you reach your goals? How do you plan to make use of these resources? What other do you plan to share within your proposal team?

Part III: Exploration of the PI's Personal Qualifications and Commitment:

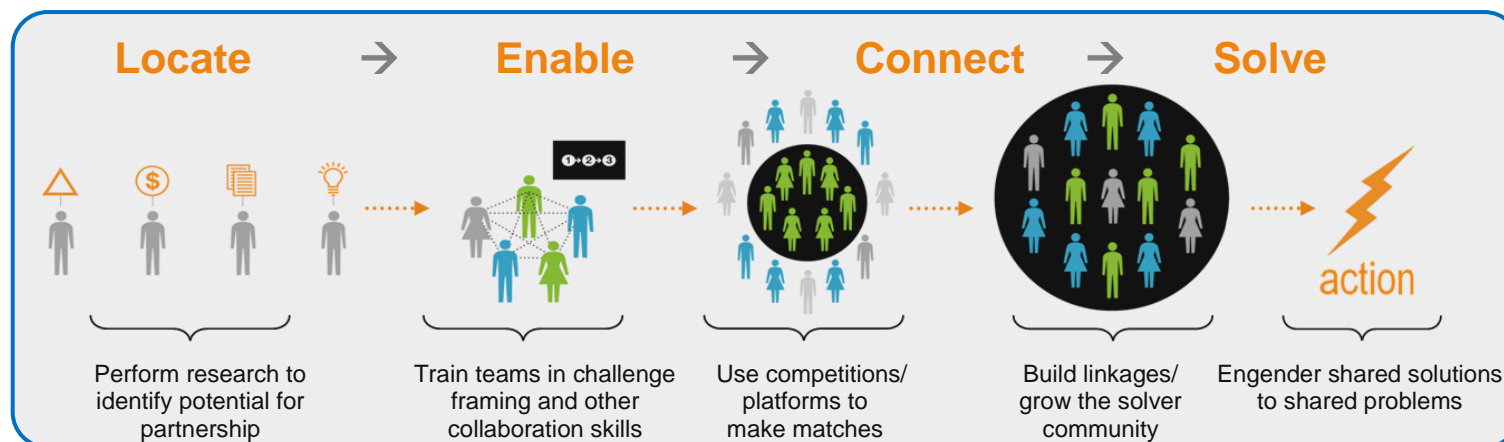
7. What personal qualifications / experiences make you particularly well suited to tackle this challenge? *Please attach resumes / CVs outlining the qualifications for the PIs. Additional CVs for other team members are not required but may be added. These will not be counted against the 5-page limit, though the Technical Review Committee suggests that individual CVs not exceed 3 pages.*
8. What percentage of time do you spend working on this challenge?

***Submit completed 5-page maximum proposal and budget narration by email on or before
June 20, 2014, to GKI's Courtney O'Brien at: courtney@gkinitiative.org***

Annex V: Background on GKI

Our Start: The Global Knowledge Initiative (GKI) originated from the 2008 Higher Education Summit for Global Development convened by the US Secretaries of State and Education and the Administrator of the US Agency for International Development. Attended by more than 200 university presidents, heads of technology firms, and philanthropists, the Summit called for a “clearinghouse for resources & information to help build knowledge partnerships that can tackle development challenges.” Five years later we’ve trained hundreds of innovators globally, delivered solutions to challenges in agriculture, water, and climate, and built processes and tools that equip our partners to build networks that solve problems.

Our Process: We address developing country-based challenges pertinent to science, technology, and innovation (STI) by helping solvers: **Locate** and render accessible critical resources—technical, human, institutional, knowledge-based—required for collaborative problem solving; **Enable** partners to collaborate effectively through trainings and competitions; and **Connect** seekers together with the global network of problem solvers to bring solutions to scale. Dubbed “one of the world’s top 100 innovations for the next century” by the Rockefeller Foundation (2013), this approach effectively delivers solutions to some of the world’s toughest challenges.



Our Approach

We work with a continuum of partners. GKI takes an innovation systems approach. We engage a diverse array of actors—universities, private firms, governments, professional societies—as a means to empower the people within institutions to spur systemic change.

We clarify the context for collaboration. For universities, firms, and organizations seeking to explore new partnerships in new geographies, our research and analysis equips them with an understanding of the context, community, needs, and opportunities for collaborative activity.

We frame and map the challenge space. Complex and multi-disciplinary challenges must be unpacked and framed correctly to enable action by diverse problem solvers. GKI facilitates challenge framing and mapping to promote clear communication and foster collaboration.

We cultivate talent. GKI connects problem solving and capacity building by facilitating and training on key skills for “collaborative innovation.”



Dairy Value Chain Collaboration Colloquium: CHALLENGER PROFILES

Created by:



With Support from:





Challenger: Clayton Arinanye

Position: General Manager

Organization: Uganda Crane Creameries Cooperative Union (UCCCU)

Location: Southwest Uganda

E-mail: arinanyeclayton@yahoo.co.uk

Introducing Clayton Arinanye: A development economist by training, Mr. Arinanye was invited to help lead the launch of the Uganda Crane Creameries Cooperative Union (UCCCU) in 2007 as the General Manager. His tenure at the Uganda Export Promotion Board and Uganda Coffee Trade Federation equipped him with a deep understanding of national and international trade markets. Furthermore, Mr. Arinanye's expansive network and cooperative development and management skills were pivotal in propelling the success of UCCCU, whose membership has almost doubled to 18,000 dairy farmers, 140 primary cooperative societies, and 10 unions. His current role involves managing farmer cooperative unions, designing strategies to improve the selling price of dairy products, and ensuring that UCCCU farmers have access to exceptional extension services. In partnership with aBi Trust, UCCCU is developing an €6.7 million cold chain facility and is also in the process of constructing a farmer owned dairy processing plant to improve the quality of raw milk supplied by UCCCU cooperatives and enhance the bargaining power of farmers.

The challenge I seek to solve: With 80% of milk supplied by an informal sector with limited access to processing and advanced production methods, the Ugandan dairy supply is being outpaced by the demand of an increasingly urbanized and growing population. This high demand, however, brings with it a moment of great opportunity. If farmers can produce and process more milk, they can meet demand and capture a larger percentage of the market price of milk. By seizing the pricing advantages of processed milk, farmers can increase their incomes. Helping farmers and UCCCU members seize the opportunity to increase their incomes and well-being through increased production of milk and increased processing of their milk is the challenge I seek to solve. Currently, many UCCCU members depend on rain-fed methods to feed livestock, which leads to high variability in milk production. This variability is only increasing with changing weather patterns. It constrains existing processors who need reliable supplies of milk, and prevents new processors from entering the market. Furthermore, the majority of milk sold in the informal sector is sold in a raw, unprocessed form. Exposure to alternative low-cost, high-yield production and processing methods as well as training are paramount to optimizing the economic returns for rural farming households engaged in the dairy sector.

My vision for solution: My goal is to help UCCCU farmers increase their production and processing of milk to increase their incomes, but I need partners with diverse expertise to transform these ideas into a reality. Together we can:

- Train UCCCU farmers on alternative drought-resilient methods for feeding livestock that will help increase milk production year-round in southwestern Uganda.
- Design and build a farmer-owned processing plant. This will enable farmers to add value to their milk production and capture a greater percent of the market prices.



Why I'm seeking partners: Partnerships are essential to drive real progress on this challenge. Among many areas, I need support with:

- Training and facilitating the adoption of new technologies among farming communities. I seek like-minded partners with experience with cooperatives to share success stories.
- Creating affordable and context-based technology for fodder preparation, feed mixing, and storage.
- Finding expertise on how to launch and sustain a joint venture, such as building a processing plant.
- Developing and accessing quality, low-cost milk processing equipment.

Expertise in the following areas would be particularly welcome:

- 1) Agribusiness
- 2) Animal nutrition
- 3) Mechanical and Agricultural Engineering
- 4) Food science
- 5) Chemistry
- 6) Microbiology





Challenger: Billy Butamanya

Position: Deputy General Secretary

Organization: Uganda Cooperative Alliance (UCA)

Location: Kampala, Uganda

E-mail: bbutamanya@uca.co.ug

Introducing Billy Butamanya: Billy Butamanya is a tireless champion of the cooperative movement in Uganda. With deep expertise in entrepreneurship training and experience leading curriculum development in Uganda for the United Nations Industrial Development Organization (UNIDO), Billy came to the Uganda Cooperative Alliance (UCA) where he saw cooperatives as key to improving the livelihoods of poor farmers. Recognizing the potential for the dairy sector to transform communities in rural Uganda, Billy and the UCA provide guidance and support to build capacity at the individual and institutional level. The UCA bolsters farmer skills through trainings and education services at the cooperative level, while strengthening cooperative organizations to better provide financing, marketing, and value addition services to members. Although Billy has been successful in supporting the cooperative movement and establishing cooperatives that are self-governed and self-funded, there is still work to be done to enhance the financial and resource capacity of cooperatives so that they fulfill their potential to break the cycle of poverty in rural Uganda.

The Challenge I seek to solve: Dairy farming, especially the free-range practice, carries animal health risks that often require the urgent attention of veterinary experts. Climate change is bringing new vector-borne diseases as well as hotter and longer dry seasons, reducing water availability and leaving cattle more susceptible to heat related diseases. Animal health problems threaten farmer livelihoods; however, the provision of veterinary services—ranging from disease diagnosis to farming practices that promote animal health—is notoriously slow, and in many areas of Uganda, absent. Public veterinary workers are overburdened and private sector providers have failed to fill the vacuum. In rural Uganda, the supply of veterinarians has not kept pace with demand and the quality of services is deteriorating. The problem is twofold: for rural farmers, access to veterinary services is often limited to uncertified, or poorly trained veterinarians, while high-quality veterinarians remain expensive and far-removed from many rural farmers. Increasing smallholder farmer access to high-quality, reliable, and affordable veterinary services to improve animal health, productivity, and farmer incomes is the challenge I seek to solve.

My vision for solution: With the resources and expertise gained from new partnerships, I am confident we can improve farmer access to quality veterinary care together. In the next three to five years, we can:

- Strengthen dairy cooperatives' connections and partnerships with high-quality veterinary service providers. Dairy cooperatives can then facilitate access for their members and serve as gravitational centers of demand for services.
- Create cooperative business models that afford on-staff veterinarians.
- Build awareness and know-how among farmers of which animal health issues require veterinary care. Farmers sometimes improvise veterinary services and inadvertently do harm.



Why I'm seeking partners: Given the complex nature of this challenge, partners are paramount in finding a solution. Among others, I seek partners to assist with:

- Developing trainings for farmers and cooperatives on best practices to reduce disease among livestock. This preventative action could keep animals healthy, improving productivity and minimizing the need for veterinary services.
- Creating and/or improving effective, low-cost channels for veterinary service delivery.
- Strengthening avenues for knowledge exchange between veterinary professionals and smallholder dairy farmers.
- Identifying high-quality veterinary service providers.

Expertise in the following areas would be particularly welcome:

- 1) Veterinary medicine
- 2) ICTs
- 3) Public health
- 4) Agribusiness and economics
- 5) Climate Science
- 6) Knowledge Management





Challenger: Fred Kabi

Position: Senior Lecturer

Organization: Makerere University, Department of Agricultural Production

Location: Kampala, Uganda

E-mail: fred.kabi@gmail.com

Introducing Fred Kabi: Dr. Kabi wears many hats as an educator, researcher, and budding entrepreneur. He lectures at Makerere University in the Department of Agricultural Production, directed Makerere's Continuing Agriculture Education Center through January 2014, and conducts cutting edge research for the World Bank. Through this work, Dr. Kabi developed a number innovative supplements for animal nutrition, including a molasses-based "milk booster" and the new "calf accelerator," both poised to dramatically improve Uganda's cattle production and thus enhance the livelihoods of thousands of rural Ugandan smallholder farmers. In his current work Dr. Kabi is investigating how best to bring his expertise and experience to the production of low-cost, earthworm-derived sustainable protein supplements for animal feed. However, Dr. Kabi lacks the structural and technological capability to produce the earthworm feed supplement on the scale necessary to dramatically transform the lives of Uganda's poor. Until he can find the resources necessary to scale his work, those suffering from poverty and low farm productivity will be unable to access this innovative product and the lifestyle changes it promises.

The Challenge I seek to solve: In my country, agricultural output can be an issue of life or death, the difference between health and a better life or the vicious cycles of poverty and hunger. Low productivity for both crops and livestock keeps many smallholder farmers in East Africa hungry and in poverty. One point of intervention to increase productivity—and with it incomes and human nutrition—is improving animal nutrition. When animals do not eat enough protein, they cannot produce well and farmers elicit lower prices for them. The costs of protein supplements made from Silverfish are rising, making proper animal nutrition increasingly challenging for smallholders. Earthworms offer an innovative, sustainable alternative. Earthworms thrive in the bio-slurry emitted from biogas (methane) plants and generate a nutrient rich fertilizer as well as a novel source of protein. By cultivating earthworms, dairy cow owners can access an additional source of income, create employment opportunities, and meet the need for protein-rich feed for livestock. By nurturing nature, smallholder farmers can combat both hunger and poverty through agro-ecological innovations that foster integration of crops and livestock.

My vision for solution:

With the support of the partners who have resources and expertise in data collection and technology and business development, I have high hopes for tackling this challenge. Together we can:

- Demonstrate to youth and women that with just a half an acre of land a farmer can use intensive agro-ecological methods to make money from several enterprises such as yogurt, manure, protein supplements, and hay, all emerging from the dairy value chain.
- Create a private registered training enterprise to share and scale these skills within the next year.



Why I'm seeking partners: Partners are vital to solving this challenge. Among others, I seek partners to assist with:

- Setting up simple earthworm solar drying equipment. This will allow earthworm out-growers to dry their products before selling to the feed millers. Central drying will enhance quality control.
- Amino acid profiling through external laboratory analysis. This will provide a more accurate scientific basis for superiority of earthworm protein and its promotion to other livestock species such as dairy cattle that can consume it as a protein source.
- Creating a market for the earthworm meal produced by smallholder dairy farmers. Connecting earthworm producers to the feed millers and organic farmers will be a vital market incentive to sustain the innovation among the producers.

Expertise in the following areas would be particularly welcome:

- 1) Mechanical and Agricultural Engineering, particularly those with expertise in solar drying technology
- 2) Organic agriculture
- 3) Chemistry
- 4) Business and economics
- 5) Food science
- 6) Nutrition





Challenger: James Lwerimba

Position: Country Director Uganda

Organization: World Wide Sires Ltd. Uganda

Location: Kampala, Uganda

E-mail: lwerimba42@gmail.com

Introducing James Lwerimba: James Lwerimba serves as the Uganda Country Director at World Wide Sires, a multi-national marketer of cattle genetic materials and breeding services. In this role he focuses on the marketing and distribution of materials for cattle production in Uganda. With a background in engineering and a focus on genetics, he has worked in the East African dairy value chain for over 15 years. At World Wide Sires, James has leveraged his expertise to engage in work promoting economic development of smallholders, including work with Land O'Lakes International Development on the 1998-2001 East Africa Dairy Business Project in Kenya and Uganda. With a project goal of increasing milk production, James saw first-hand how the provision of good genetics would not necessarily improve dairy cattle productivity if the right factors were not in place for the animals. Knowing this, James is dedicated to working to help farmers realize the benefits of quality genetics.

The Challenge I seek to solve: In East and Southern Africa, cows crossbred for quality genes can produce significantly more milk than cows without improved genes. In Uganda specifically, overall per-cow milk productivity is among the lowest in the world due to poor breeding and feeding practices. Here, crossbred cows account for only 20% of the national cattle population, but produce nearly 60% of Uganda's milk. Improving a herd through the use of high quality genetic materials is possible, but without good management of the genes and herd, genetic material benefits such as increased milk production are not realized. If benefits are not realized, demand dwindles for the potentially transformative genetic materials offered by firms. For the genetics market to flourish, reach scale, and have the full impact of which it is capable, on-farm management of cattle must be improved. In my experience distributing and marketing genetics, I have realized there are gaps in farm and dairy management skills and awareness. Farms and dairy cooperatives must be managed properly; vaccination, animal nutrition, finances, and especially record-keeping are vital. Meeting this need for skills can improve productivity, demand for quality genetics, and the Ugandan dairy sector writ large.

My vision for solution: There is great opportunity to tackle the challenges of marketing and realizing the benefits of good animal genetics, but we cannot act alone. Together we can:

- Create an on-farm training of trainers program to teach proper, suitable management skills to farmers. The training-of-trainers will allow these skills to filter broadly.
- Establish a demonstration farm to show farmers and trainers proper feeding practices, proper record-keeping, and proper animal health measures.
- Integrate the training and demonstration systems for maximum benefit and impact.



Why I'm seeking partners: My vision is integrated and will require input from diverse partners. Among others, I seek partners to assist with:

- Accessing or adapting low-cost technologies for data collection on herds and breeds.
- Identifying low-cost technologies and techniques for disseminating information to farmers and trainers.
- Identifying and partnering with data experts.
- Developing training curricula and educational materials on proper management practices for farmers.
- Providing technical assistance, expertise, and training in nutrition and record-keeping to stakeholders at all levels.

Expertise in the following areas would be particularly welcome:

- 1) Data management
- 2) Nutrition
- 3) Education
- 4) ICTs
- 5) Genetics
- 6) Veterinary medicine





Challenger: Henry Njakoi

Position: Country Director

Organization: Heifer International

Location: Dar Es Salaam, Tanzania

E-mail: henry.njakoi@heifer.org

Introducing Henry Njakoi: With over 22 years of leadership experience at Heifer International, Henry possesses a wealth of expertise in smallholder livestock enterprise development in Africa. At the Cameroon office, where he became Country Director in 2005, Henry helped establish more than ten dairy production cooperatives that distributed cows to farmers with limited resources and developed a community-based animal healthcare program that trained motivated livestock farmers in veterinary best practices. In Cameroon, Henry also tackled the problem of quality heifer availability by implementing breeding schemes based on local demand for genetic type, increasing the production and distribution of quality dairy cows to trained farmers. Henry has continued to promote the grassroots development of dairy farming communities with his recent transition to become Heifer International's Country Director in Tanzania. In this role, Henry helped spearhead the expansion of the East Africa Dairy Development (EADD) program to Tanzania with the goal of improving living standards by transforming the livelihoods of 35,000 smallholder dairy farming families.

The challenge I seek to solve: Although Tanzania has an estimated 21.4 million cattle, only about 3% constitute improved dairy cattle breeds such as Jersey, Friesian, and Ayrshire. The majority of Tanzanian cattle are the indigenous zebu cattle that produce drastically less milk than those bred for quality; however, simply importing improved cattle, a popular practice in the past, is prohibitively expensive and has not yielded improved genetics on a large scale. With this genetic productivity gap remaining, the key challenge in dairy development in Tanzania is an acute dearth of appropriate breeds and genetic levels of dairy heifers, in terms of both quality and quantity. While Tanzania has the livestock endowment to improve the genetic distribution of dairy cows, the lack of a comprehensive tracking and recording system constrains effective breeding efforts. Taking into account the need for replacement dairy heifers by smallholder, medium, and large-scale dairy farms and the growing number of new dairy farms, there is a clear opportunity for private enterprise to meet the need for quality heifers and create employment opportunities through commercial dairy cattle farming and quality heifer production. Bottlenecks to such private enterprises include the need for improved business models and access to appropriate innovations and technologies such as sexed semen and embryo transfer to enhance heifer production on these farms.

My vision for solution: With support from partners with technical and professional expertise in commercial dairy farm development, we can ensure the transition to a vibrant and competitive dairy sector. Together we can:

- Develop at least one private commercial farm able to access and implement the appropriate technology and expertise based on the size and production system of the farm within one year; in five years, there should be one private farm in each region of Tanzania under the EADD program: Iringa, Mbeya, and Njombe.
- Catalyze the emergence of private sector-led solutions to increase the production of quality heifers and address the goals of all our partners.



Why I'm seeking partners: Partnerships are essential to drive real progress on this challenge. Among many areas, I need support with:

- Accessing technical assistance for farms looking to produce quality heifers. They will need appropriate breeding and recording schemes and professional expertise to develop such schemes on commercial dairy farms.
- Identifying and creating successful business models for dairy heifer production to secure capital investment from local banks, micro-finance institutions, and venture capitalists.

Expertise in the following areas would be particularly welcome:

- 1) Dairy cattle breeding technology
- 2) Agri-business planning and economics
- 3) Veterinary Medicine
- 4) ICTs
- 5) Genetics
- 6) Knowledge management





Challenger: Tom Sillayo

Position: General Manager

Organization: Faida Market Link (Faida MaLi)

Location: Arusha, Tanzania

E-mail: tomsillayo@yahoo.com

Introducing Tom Sillayo: In his role as General Manager at Faida Market Link (Faida MaLi), Tom Sillayo works with Tanzanian smallholder farmers in dairy and other value chains to help them gain and retain market access for their goods. Using a tested 10-step market linkage approach to build trust and ongoing partnership between producers and buyers, Faida MaLi builds capacity among farmers to assure and retain market outlets. Since its founding in 2003, Faida MaLi has helped create over 600 farmer producer groups and trained over 80,000 producers in how to access markets. In the dairy value chain, Faida MaLi is collaborating with ILRI to improve and scale value chains in Tanga and Morogoro as part of the MilkIT program. They are also working with SNV to create and support milk collection centers in Tanzania. Tom's academic background is in Community Economic Development and Co-operative Management, Financial Management, Planning and Economics. Seeing first-hand the role science can play in helping his partner farmers, Tom is a keen champion for incorporating science into the work of economic development for smallholders.

The challenge I seek to solve: A successful dairy industry has the potential to transform the health and economic well-being of communities around Tanzania. Accessing markets for milk is imperative for smallholder dairy farmers. Without market access, surplus milk cannot reach consumers and farmers' incomes will not increase. Faida MaLi works tirelessly to help farmers get market access, but access alone is not enough; farmers must retain that access. To do this successfully, it takes much more than marketing; farmers must deliver the value the processors and buyers need. When I speak with dairy buyers, their concerns are related to milk quality and volume. At present, production volumes in Tanzania fluctuate dramatically, with dry season production just 56% of wet season production in some areas. For the dairy value chain to flourish in Tanzania, milk buyers and processors need a reliable supply of quality, unadulterated, safe milk. Assuring such a supply requires that farmers and other dairy value chain stakeholders understand and practice proper animal nutrition, vaccination, safe milking practices, and hygienic transport. Many in the dairy value chain do not have the information and training they need to follow these practices; bridging the knowledge gap between farmers, processors, scientists, and development professionals to assure a reliable volume of quality milk is the challenge I seek to solve.

My vision for solution: Assuring that smallholder dairy farmers can maintain healthy and durable market linkages and a safe, reliable supply of milk for buyers and processors is a pressing and exciting challenge. With the support of partners with scientific expertise, together we can:

- Train smallholder farmers in milking techniques to minimize the risk of contamination. Doing so will improve the supply of marketable milk.
- Train farmers in proper feeding techniques.
- Work with smallholders to assure compliance with quality standards to enable sale of milk beyond the local markets.



Why I'm seeking partners: Partnerships with those with scientific expertise are essential to drive real progress on this challenge. Among many areas, I need support with:

- Analyzing milk in a laboratory. Understanding current milk quality will help us understand what problems may be occurring along the value chain.
- Developing training on animal husbandry, including proper feeding.
- Understanding safe, hygienic methods for transporting milk. This will help us assure that proper farm practices are not undone *en route* to the processor.

Expertise in the following areas would be particularly welcome:

- 1) Microbiology
- 2) Chemistry
- 3) Public health
- 4) Veterinary medicine
- 5) Nutrition
- 6) Education





Challenger: Mayasa Simba

Position: Acting Registrar (CEO) & Manager of Marketing Services

Organization: Tanzania Dairy Board

Location: Dar-es-Salaam, Tanzania

E-mail: mayasasimba@gmail.com

Introducing Mayasa Simba: As Acting Registrar (Chief Executive Officer) and the Manager of the Marketing Service Department of the Tanzania Dairy Board, Dr. Mayasa Simba routinely applies her 10 years of experience tackling complex challenges within the dairy sector. In her roles at the Tanzania Dairy Board, Dr. Simba works to develop a competitive, well-coordinated, and regulated dairy industry that can contribute to national economic development and improve the livelihood of Tanzanians. Equipped with an M.Sc. in Public Health and B.Sc in Veterinary Medicine, Dr. Simba also has expertise building the capacity of both formal and informal milk chain actors through training, technological adoption support, organizational development, and facilitating access to business development and financial services. Coupled with her experience in advocating for policies to improve the dairy business environment in Tanzania, Dr. Simba is well-positioned to improve performance and safety along the dairy value chain.

The challenge I seek to solve: The Tanzanian dairy industry is still dominated by the informal sector. Only about 3% of the milk produced in Tanzania is delivered to factories for processing, while existing milk processing plants are only operating at 34% of their capacity. Given the prevalence of unregulated milk production, the variation in milk quality on the Tanzanian market may expose the public to health risks associated with milk-borne diseases, such as *Listeria*, *Salmonella*, *E. coli*, and even aflatoxins. Robust quality assurance systems are therefore critical to safeguarding public health. Among dairy stakeholders, insufficient awareness, understanding, and compliance with regulations present real challenges to successful quality assurance in the Tanzanian dairy industry. My challenge and that of the Tanzania Dairy Board (TDB) is to incentivize compliance with regulation and mitigate the incidence and risk of public health problems due to ineffective quality assurance systems. Successfully tackling this challenge would improve milk quality, increase consumer confidence, better position informal milk producers to enter the formal market, and improve incomes of Tanzanian dairy farmers and public health.

My vision for solution: I seek to incentivize regulation compliance and mitigate the incidence of public health challenges due to ineffective quality assurance systems by delivering training and routinely dispatching local government inspectors. With support from partners with scientific and technical expertise, together we can:

- Aid informal dairy industry stakeholders in better understanding the regulatory environment in which they operate and assist them in becoming well-versed in quality assurance techniques.
- Partner with business development services and local governments to tap into the local networks necessary to connect, train, and integrate informal dairy industry actors.



Why I'm seeking partners: Partnerships are essential to drive real progress on this challenge. Among others, I need support with:

- Customizing quality assurance methods for informal milk channels. Compliance is more likely if actors can use methods designed with them in mind.
- Developing training modules and a certification for informal milk traders. This will allow dairy producers to recognize and reward safe practices among informal traders.
- Developing and disseminating hygiene manuals and inspection guides.
- Identifying and registering dairy actors in a cost-effective, user-friendly manner. This will assist with regular inspection.

Expertise in the following areas would be particularly welcome:

- 1) Microbiology
- 2) Education
- 3) Public health
- 4) Food science
- 5) Political Science
- 6) ICTs

